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THE SIGNIFICANCE OF THE FINE ARTS

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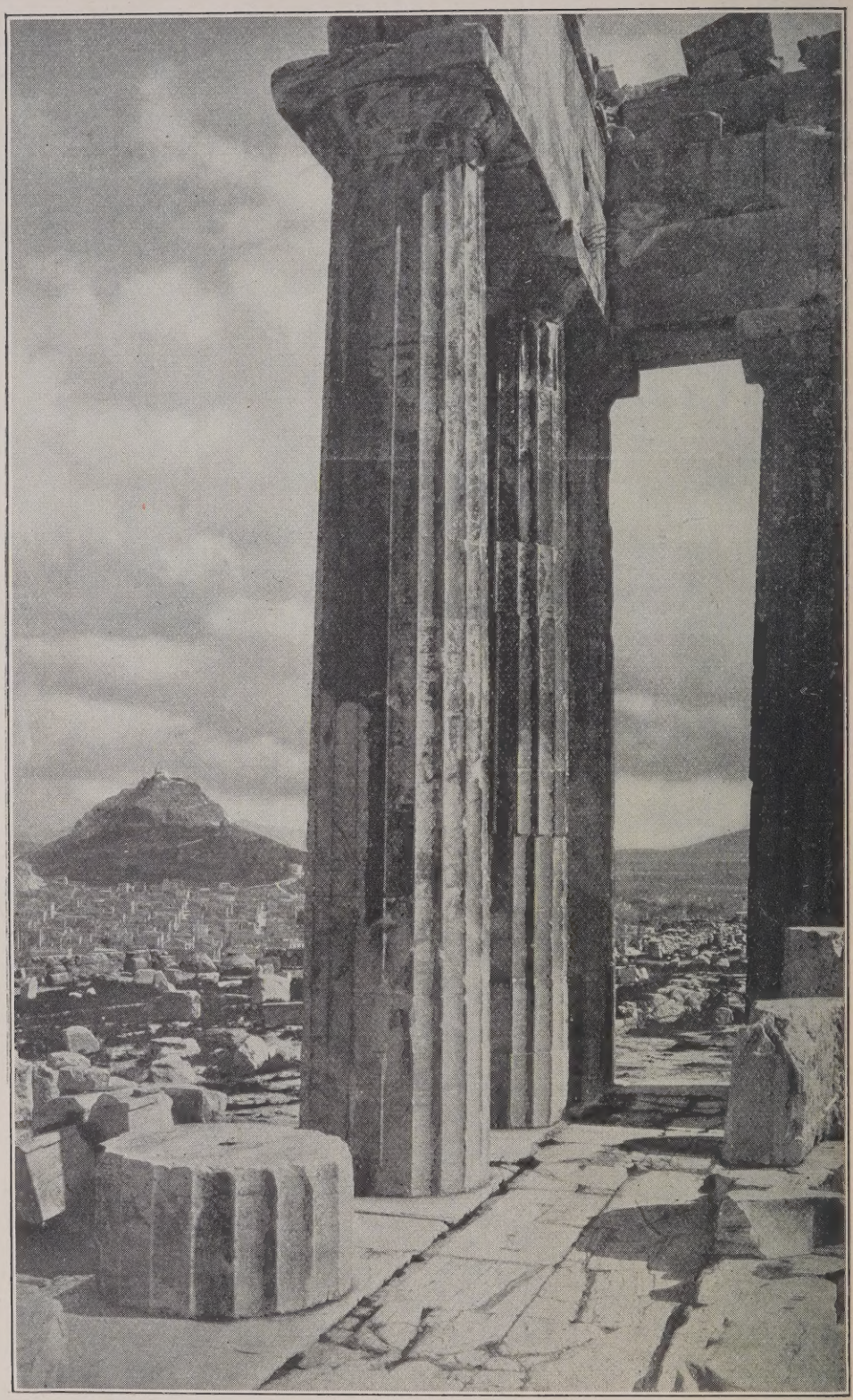

PERISTYLE OF THE PARTHENON, ATHENS

PLATE I

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II The Architecture of the Middle Ages
Ralph Adams Cram — *Boston*

III The Renaissance
H. Van Buren Magonigle — *New York*

IV Modern Architecture
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INTRODUCTION

THE APPRECIATION OF ART

The Committee on Education of the American Institute of Architects has produced this book for use as a textbook in American colleges, and for general reading and study by the public, with the purpose of arousing interest in the fine arts and creating a better understanding and appreciation of them.

A study of the fine arts is one of the best means that can be employed for training the mind, developing and refining the judgment, and for obtaining a fund of information that is useful and practical throughout life.

The fine arts embrace many of the essential activities of human life, the building of the home, its furnishings and equipment, the housing of every industry, vocation, or calling, the building of cities, the providing of amusements and many of the features of life upon which we depend for our enjoyment and pleasure.

Furthermore, the industries and commerce of the country depend to an important degree upon the fine arts. Every manufacturer who produces an article which, for its sale and enjoyment by the purchaser depends upon its design, must look to art for a large measure of his success in business.

Our lives are surrounded by art in its manifold expressions: it is thus not only desirable but essential that our schools and colleges provide us with both knowledge and appreciation of this subject.

Art also exercises an important influence in the formation of human character.

Each individual is constantly called upon to exercise a choice, based upon attractiveness and fitness, of the things which he is to possess, and of the activities of life which furn-

ish his pleasures and amusements. A knowledge and understanding of some of the basic principles of art will fit him better than any other agency possibly can for establishing the highest standards of taste.

The attitude of the public toward art is undoubtedly growing more favorable. Museums and institutions of art show by their records that they are growing in popularity. Some of our greatest modern inventions are daily reproducing the products of art, and great masses of people are constantly listening to music and seeing pictures of the dramatic art and examples of the plastic arts.

The taste of the people is improving as they are demanding productions of a higher type and better quality.

History reveals the fact that those nations in the past which were leaders in commerce and the industries were also the leaders afterwards in the fine arts, and it is also significant that many of the people of America are descendants of those who excelled in the arts in Europe.

All of this seems to indicate that we, in this country, are beginning to realize more than ever before that art is worthy our careful consideration, and that a reasonable knowledge and understanding of it would bring greater returns and more real joy in living than almost any other study which we could pursue.

With all this in mind, the architects of the country as represented by the American Institute of Architects, through its Committee on Education, have undertaken to arouse popular interest in the subject, and to make art instruction an integral part of all education. While the difficulties that stand in the way are not overlooked, the Committee is stimulated and encouraged in its efforts by the fact that leading representatives of each one of the Fine Arts have joined most heartily in the work, while the Association of American Colleges has, through its special committee, already worked out a plan for the introduction of training in appreciation of the Fine Arts in the regular college courses.

After three years' study of the problem, and a careful scrutiny of available literature on the subject, it was decided that the first work undertaken should be the publication of this volume which is intended not only as a basis for the proposed art courses in college, but also for general reading and study.

Its outstanding features are:

Freedom from technical matter not essential for the layman, simple language and the absence of complicated theoretical discussion.

The novel method of presentation of the principal architectural periods, in which the effort has been made not so much to identify the different styles with their historic periods, as to explain how these styles represent, and developed from, the customs, habits, and social and religious life of the several peoples.

The use of anecdote and story in connection with the great architectural achievements of the world.

The presentation in simple form of those vital principles of design and construction which not only govern all good architecture, but should also influence the character of all other arts and every manufactured product and material thing that human hands can make.

The drawing of a clear distinction between good and bad design and color, and the discussion of those simple rules and principles which must be known if one is to possess good taste and refined judgment.

The important chapter on Modern Architecture which describes new methods of construction, the new problems of design, the revolutionizing of many of the old modes of life by the new era of mechanical development, and the interesting reflection of the very pronounced characteristics of the people of to-day in their buildings.

While only a brief presentation of the allied arts has been made, it was found possible in the discussion of these subjects, to indicate the present trend in the practice of these arts and to point out their underlying principles and their points of merit. Particular emphasis is given to those simple principles upon which the industrial arts are founded, which every manufacturer must know if he is to produce good design in his manufactured products and which are equally essential for the purchaser or consumer of these products if he is to select for his consumption goods of the

better quality and design. It would seem advisable that a nation so largely engaged in manufacturing and commerce as is the United States should have before this, if only for business reasons, made the study of industrial art a requirement in its schools and colleges.

Landscape design and town planning are also important subjects in connection with the recent rapid growth of cities. Many cities would have been far more beautiful and healthful abodes, and untold millions of dollars would have been saved in the re-locating and reconstruction of streets, had the men of past generations only been possessed of the information contained in the chapters on these subjects.

Painting and sculpture are briefly presented, not only to still further awaken public interest in these arts and to indicate how their principal features and points of merit may be better understood and appreciated, but also because both arts have always been intimately associated with architecture in the past and must be so again if it is to achieve its fullest expression.

No treatment of the fine arts, however limited, could be complete without including music; therefore, this book contains a chapter on music. The first appeal of music is to the emotions and this is true of all kinds from the poorest to the best, but in great music there is also an appeal to the intellect and to the imagination. The object of the chapter on music is to help the reader to understand what is best in the art, and to secure for himself that pleasure and stimulus which the art is intended to afford.

While it is fully appreciated that the treatment of none of these subjects is at all comprehensive, brevity of treatment was considered essential in order to accomplish the object of the book. Bibliographies are given, however, for extended reading and study and it is hoped that other volumes, each treating more comprehensively of some one of the arts, may follow this one.

The book is intended specifically to appeal to those who heretofore have taken little interest in the arts and have had no realization of the fact that the Fine Arts are for them and that these arts are already inseparably connected with their everyday lives and destinies.

This is an age of specialization with every service in the

hands of experts whose function it is to create the design of the object to be produced, yet in the last analysis, it is always the purchaser of that object who fixes its character according to his own standards of taste and judgment. Never has the art of a nation advanced beyond the standards of excellence attained by its people.

To call the attention of the public to the real importance of the arts is the great object to be attained. No matter what a man's station or calling may be, where he goes, or what he does, the products and activities of the Fine Arts confront him on every hand. From the cradle to the grave, the works of the Fine Arts are man's everyday companions, and it is in truth essential, if we are to appreciate and profit by God's blessings in nature and the best and finest works of man, that every member of the community should have some definite knowledge and appreciation of the Fine Arts.

GEORGE C. NIMMONS
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PART I

CLASSICAL ARCHITECTURE

BY

C. HOWARD WALKER

THE SIGNIFICANCE OF THE FINE ARTS

CHAPTER I

CLASSICAL ARCHITECTURE

INTRODUCTION

Architecture, the art of building with skill and with beauty of achievement, is closely related to the life of man. It is his environment, protecting and defending him, and expressing his emotions and desires.

From crude beginnings it develops into monuments of art which give him constant pleasure and stimulate his imagination.

The history of its progress from elementary forms to its culmination in masterpieces is a fascinating study, intimately related to the records and the romance of the world.

In prehistoric times, when man began to use cutting tools, caves and tents were abandoned, and the habitations which protected man became his home, and were constructed of a framework of reeds, or of tree trunks, which were covered with hides and woven mats, creating a cell or house defying the inclemencies of the weather. At first this cell was circular in plan, and was at times built of mud or of clay, and was shaped like a mound. But soon, primitive man covered his matting walls with a clay surface, and later formed clay into rectangular shapes, or bricks, which could be easily transported, and which were thin, so that they were readily dried in the sun, and were therefore known as sun-dried brick.

Buildings were made of pieces put together, and were therefore articulated. Primitive man tied his wooden construction together, but soon learned to fit the pieces carefully. The upright features of a wooden structure were bundles of reeds, or tree trunks cylindrical in shape, which became columns, across the top of which were laid horizontal beams.

The columns were spaced at equal intervals apart so that each supported an equal weight of the beam, or lintel, and of the rafters and roof which it carried. The building was one story only in height.

As the posts and lintels were straight and the bricks rectangular, the cell became rectangular in plan. In fact, it was a rectangular box without windows, but with an entrance covered by a curtain, and later by a valve or door. In countries having slight rainfall and no snow, roofs were flat, but later a pitched roof, low where there was little snow, high elsewhere, developed.

From such simple beginnings architecture arose, influenced in its expression by climate and materials at hand. The progress of development was always towards greater stability of structure, and greater durability of material. It is manifest that apparent stability and permanency are elemental features of architecture.

The elements of structure are; Verticals, wooden or reed poles and posts, brick and stone posts, and piers; Horizontals, wood and stone beams and lintels; Arches of stone and of brick; continuous arches or barrel vaults, crossed vaults, revolved arches or domes; Surfaces or coverings of walls and of roofs, such as mats, slabs, tiles, etc., and the walls themselves.

As the straight and strong trunks of trees were not long, posts and beams made from them were seldom over 20 feet in length; the columns were therefore not high, and the width of the cells was slight, additional expansion being obtained by length, and the early cells or rooms were narrow and long.

Man, when he ceased wandering and formed clans which

remained in one place, built his shelters where he could graze his flocks and have water near at hand. Communities first appeared on lands which had grain-bearing soil, and wandering clans, which had patriarchs at their heads, settled wherever such land occurred. Hence the history of great nations begins in alluvial valleys and plains, and in the deltas of rivers. Shepherd leaders elected kings, clans united into nations; kings became hereditary, and dynasties were formed. Each clan worshipped its own god, and as nations were formed, these gods were retained and created a hierarchy of gods, some one of which was preëminent in each locality.

Primitive man feared nature's manifestations and deified them, worshipping especially the sun and the elements, and symbolizing them by images. Religions of fear arose. Gods were to be placated. Beliefs in the continuity of life after death led to ancestor worship.

Man had by this time three distinct types of habitations: his house, or home; the house of his ancestors, the tomb; the house of his god, the temple; and their relative importance is in this sequence.

His own house for his lifetime, or less, he considered ephemeral and of comparatively little importance; the tomb of his ancestors he made more permanent; but to the temple of his god he devoted the greatest skill and attention. The fourth house, the palace, appeared after monarchs became supreme and absolute. Thus were established the ethical expressions of architecture, and when government, which began when three men came together and two of them agreed, had become complex and great, demanding special habitations for its several branches of work, the civic building appeared. Finally arose the buildings devoted to defence, to recreations, and to industries.

In the deltas and valleys of rivers, and on the arable lands watered by mountain streams, clans gathered and built their huts, clustering together around a shrine, a fire floor, or an altar upon which burnt sacrifices were offered to the gods.

The old men were judges of disputes and advisers of their clans, and became priests and leaders. Upon the young devolved protection by the strong arm, and from them the kings arose who founded dynasties. Nomadic existence was being replaced by established communities, and buildings became permanent during the bronze age, at least 6000 B.C., when cutting tools of metal made the shaping of wood and stone possible.

II. EGYPT

The oldest civilization of which authentic particulars are known is that of Egypt. The land was originally a desert plateau. The waters from the southern mountains, pouring out of a rocky glen, forced their way north for 800 miles in a river, the Nile, its bed about one-half a mile in width. It made itself a valley 10 to 30 miles wide, between terraces and hills.

The river rose annually and for four months inundated the entire valley, renewed the land for the crops by the deposit of earth brought down from the glens, and then retired to its bed, leaving a fertile soil which produced sustenance for the people, who, during the months of the inundation, worked upon the monuments of architecture erected by the kings. The substratum of the soil in the upper valley was brown stone, in the lower valley near the delta, limestone.

The hills, three hundred feet to twelve hundred feet in height, were the edges of the rainless desert plateaus east and west. Between the hills and river valley were level terraces above the inundated land upon which the cities and towns were built. The Nile, one hundred and twenty-five miles before it reached the sea, divided into a number of streams and spread into a fan-shaped delta, formed by the soil it had brought down in its course, and it was in this delta that the first buildings of Egypt were erected by peasants who cultivated the soil of the valley and lived in vil-

lages of rectangular clay huts with flat wooden roofs, probably identical with those to be seen there today.

The peasants were buried in chambers excavated in the sand at the top of the bluffs above the highest level of the river. The chambers were lined with sun-burned brick and roofed with wood. Over these graves were mounds, or tumuli. But the kings of the first two dynasties were located in the delta, from 3400 to 3000 B.C., and the buildings were of sun-burned brick, while brick arches were used for work below ground to sustain the load of earth. The work was primitive, however, and little remains. As time went on, the tomb chamber was lined with limestone, for the Egyptian discovered copper and had metal tools, and tombs were built above ground of cut stone, forming what are known as mastabas (the word means bench), low, truncated, rectangular pyramids, with a door opening into one or more tomb chambers.

Religion had meanwhile taken definite form. Two of the many gods were preëminent: Re, the sun god, and Osiris, the Nile god; for the life of the people depended upon both. Man's soul after death was supposed to go through many tests before it was judged by a conclave of the gods, and during its wanderings was aided by Osiris. The spirit of the dead was supposed to return to the tomb chamber at times as later the spirit of the god returned to his temple; in fact, the tomb was considered the spirit's home, and in the chamber food was left, together with little images of servants to assist the spirit in its journeyings. As the spirit must have a body to which to return, the bodies of the dead were embalmed and concealed to prevent their destruction, and indestructible images of the dead, possibly to take the place of the actual body if it were destroyed, of Nubian granite, were erected. The actual cell in which the body was placed was at the foot of a deep vertical shaft in the mastaba, which was closed by a stone in the roof in such a manner that it was difficult to find.

About 2980 B.C., at the beginning of the Third Dynasty,

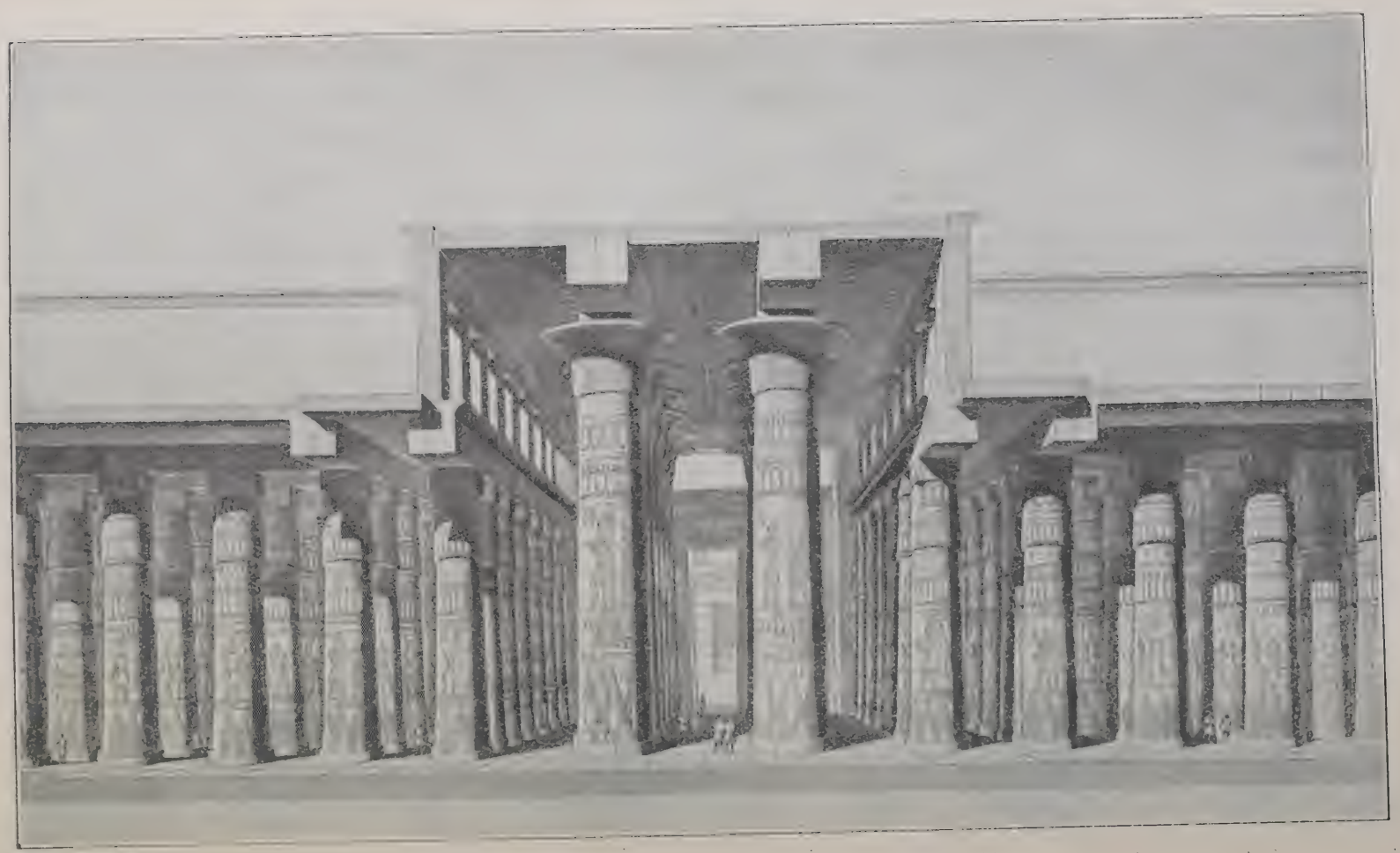
the royal tombs began to take the form of pyramids, or mastabas built to an apex, the tombs of the nobles remaining in the truncated mastaba shape. In 2900 B.C. a large pyramid 214 feet high, covered with carefully jointed, polished limestone, was built at Meidum. Almost immediately afterwards one was built at Memphis, 709 feet square and 325 feet high, which was followed by the three great pyramids of Egypt of the Fourth Dynasty kings, Khufu (Cheops), Khafra, and Kephren Menkere, built upon a desert plateau at Gizeh near Memphis. The first is the largest, 736 feet square and 484 feet high, of 2,300,000 blocks of stone, each weighing two and one-half tons. Records state that it took 100,000 men ten years to build it. The layers were laid by ramps, spiralling around the growing core, the outer layers finished in steps, which were filled in when completed to an even plane with carefully cut and polished limestone.

The increase of civilization and of power in five hundred years was phenomenal. The kings had huge establishments of officers to govern the country, and the kings and nobles had dwellings in the midst of gardens surrounded by walls. These were all of sun-burned brick and wood, or of reed columns and woven reed walls covered with clay or stucco, and have in most cases disappeared; but the pyramids with long sloping galleries descending to the concealed tomb chamber of the kings in the solid rock beneath were of brick and limestone, and seem imperishable and eternal. They are the largest constructions made by man, and have a simple, noble dignity. As the sun set in the west, the soul followed and entered the land of the dead in the west; therefore all tombs and temples were upon the west bank of the Nile, while the cities were upon the east bank.

The first temples appear to have been mortuary temples, placed immediately before the pyramids, and used for ceremonies before the body was placed in the tomb chamber. There was a small temple containing statues of the king on the river bank at which the funeral procession, arriving from

THE GREAT PYRAMIDS AND TEMPLE OF THE SPHINX, EGYPT

PLATE 2



HYPOSTYLE HALL IN THE TEMPLE AT KARNAK, EGYPT

PLATE 3

the opposite side, landed, and from which a long covered passage led to the mortuary chapel or temple on the plateau above the river and to the east of the pyramids. This was at first a covered court with the roof supported upon square piers of stone, and with a series of side rooms. It next took the shape of an open court with a colonnade at its far end or around its sides. Thus began the peristyle court, or court with columns around it, which became a very important feature of architecture in the East, and was adopted later in Greece and Rome. The stone supports were at first large piers, the corners of which later were bevelled, and had 16 faces, which were developed into flutes.

The Old Kingdom and the beginning of the history of the kings of Egypt dates from 3400 B.C., when the forty-four communities of the delta, each and all under control of their local priests, were united, and the power of the priests to control the land was broken by Menes. The first king who established the seat of government at Memphis was about 3000 B.C., and the old kingdom of four dynasties lasted for the five hundred years following. The year 3000 B.C. is therefore an important one in the history of Egypt. It was during the Fifth Dynasty, 2750 to 2625 B.C., that we find the highest perfection in all the arts. Columns with capitals suggested by lotus buds and known as bud caps, appeared, and the concave cornice with palm-frond ornament was used at the top of the walls, obelisks made their appearance, and alabaster was used for altars and doors. It was at this time also that the need of a sanctuary for a god created a new motive of architecture — a sacrificial court, sufficiently large for a considerable number of people, in which was an obelisk or a statue with an altar before it, while on either side were treasure chambers. These open courts were the centers for religious ceremony long before temples were built.

The Old Kingdom began to wane about 2500 B.C. and the king's nobles gradually became more powerful than the king. They had been his vassals or servants, but now during five

hundred years they became more and more independent of the king who still reigned in Memphis, while the princes fought amongst themselves. Despotism, however, was lessened, and the princes became civilized and humane, and idealistic aspirations appeared; libraries, the oldest in the world, were collected. Upper Egypt, governed by the princes of Thebes, finally took control under new kings named Mentuhotep, and the seat of government moved south to Thebes. The Old Kingdom was over, but Memphis had given the world the pyramid, the obelisk, the altar, and the sanctuary court.

The traveler coming up the river at dawn in the days of the Old Kingdom; as the low boat, with high curving ends, breasts the slow, majestic current of the Nile, notes the fields about him, which have spread as far as he could see, gradually narrow, and through the low-lying heat-haze the bluffs begin to draw in towards the river bed; low reed and mud-built, flat-roofed huts appear on his left, little mounds on the right. Men, stripped excepting for a loin cloth, lean, lithe, and dark brown, with straight black hair and eyes half shut with the constant glare of the sun, lower long well sweeps into the river and lift the water to the higher level and thereby add to their acreage won from the desert. Few of these men are thus at work, but all along the bank others are hurrying south in boats, or on land in groups and companies, going to their tasks upon the tombs of the kings: for in the distance great pyramids are rising upon which men swarm like ants.

The city to the left is one of little houses near the water, with lanes running up to the higher land upon which the tops of palms indicate the gardens of the palace and official buildings. In these houses by the river are the poorer classes, the boatmen, the embalmers. Down one of the broader lanes a white-robed procession is descending, with priests at its head; the embalmed body of a noble in its mummy case is being borne to the boats to journey across

the river to the city of the mastabas which is stretching away in the distance mile after mile. The costumes are scanty but full of color, striped in red and blue and green and white, and standards carrying symbols are lifted high. The boats gathered at the river-side form a solemn procession as with long sweeping stroke the body is borne to the temple at the river's edge on the other bank. The door to the long gallery opens, and the mourners disappear within.

Coming down the river with its flood are heavy, clumsy flat boats, grounding on shoals, caught in back waters and vigorously poled out by men as black as coal, the Nubians, whose kings 2000 years later were to rule Egypt. Upon the decks lies the cut limestone from the hills farther south. Long piers run out from the river banks upon which the stones for casing the pyramids are landed and checked, each stone is dated with a copper chisel, the marks stating the day of the moon. From these chisel marks the exact calendar of Egypt has been determined. It begins July 19, 4241 B.C. Everywhere are swarms of busy men, putting rollers under stones, dragging them with long lines, pushing, pulling, thrusting under the sting of the whip and the tongue of the overseers. Here and there men with richer tunics and head-dresses are to be seen: these are the architects, sculptors and painters, the artists. Sometimes the king comes himself in his many-oared barge with a horde of officials and courtiers. Everywhere is man-power working without other aid than that of the roller and the crow-bar and draught oxen, for the horse is unknown. When the base of the pyramid is reached the stones are put upon rockers and are hitched step by step up the inclines. There is a babel of noises and calls under a blazing sun. And near at hand are the brick makers, kneading the clay from the river-bed, mixing straw with it, rolling and lining it off and cutting it into bricks which they leave for the sun to burn. These are to form the mass of the structure of which the limestone, polished and reflecting the sunlight, is the garment.

Upon the other side of the river the one-storied mud and reed and stucco city spreads wide, its narrow streets shaded with awnings, the shadows deep and thick, in which the people move slowly but in great numbers. Wood and metal workers, leather cutters, weavers, skilful makers of figures of the gods and of the "watchers," or little images for the tombs; men who are firing glazes with fires of reeds; these and a hundred other craftsmen are at work in the city while the officials in chambers around a sultry garden are keeping the king's accounts, he himself having but little more pomp or ceremony than they. Later, as the day wanes, all these cross in numberless boats and go into the sanctuary court of the sun god Re, bow to his altar and to his image, while the stars burn like fire and the night wind from the desert is cooled over the Nile. Such was Memphis of the old empire.

From the Seventh to the Twelfth Dynasties for nearly five hundred years Egypt had civil wars, with the center of control first at Memphis, then seventy-seven miles up the river at Heracleopolis, and finally at Thebes. The princes who are named Mentuhotep overthrew the kings at Heracleopolis and founded the Twelfth Dynasty and the so-called middle kingdom at Thebes, 2160 B.C. It was a most prosperous period; literature and art flourished. The buildings in stone echoed the buildings in reeds. These latter were stiffened by bunches of reeds at the corners, around openings, and at the top of the walls. These in turn were recalled in the roll mouldings at the corners of the stonework. Reed columns bound at the top, developed into fluted stone columns with bud caps. The bending of the reeds under the load of the mud roof produced the concave cornice. Architectural forms were therefore of walls and vertical columns, horizontal roof-beams and slabs, creating so-called trabeated architecture, which resembled in its conspicuous verticals and horizontals the later architecture of the Greeks.

The possibilities of vertical extension were apparently considered negligible, those of lateral extension were limitless.

The buildings therefore spread broadly, greatly in excess of their height, and gave an impression of stability and of inertia which has remained the dominant feature of classic architecture as well; and the use of the single story, despite varying heights of walls, created an impression of unity throughout. Rectangular design in plan and elevation is characteristic of the work.

The new kings of Thebes founded the Middle Kingdom (2160–1788 B.C.) and began to build Thebes of the hundred gates. It is miles up the river from Memphis, and the valley is much narrower; the hills between it and the desert much higher, and they are of brown sandstone instead of limestone. The kings found it easier to cut into these hills on the east and conceal the mummies in tomb chambers than to build pyramids. A period of a thousand years had elapsed since the first pyramid was built.

Egypt had meanwhile become less isolated; she had extended her commerce south into the hills and north across the Isthmus of Suez. Her prosperity was known, and tempted other peoples, who came down upon her from Asia, overcame her weak kings, and occupied the land for a hundred years. These Semitic Asian invaders were known as the Hyksos or Shepherd Kings. They destroyed the buildings of Egypt and built few of their own, but they allowed the Egyptians to rule in Thebes under them. The Egyptians arose and drove out the shepherds about 1580 B.C., and slowly rebuilt the fragments of their past glories and thus recreated the Kingdom. In 1540 B.C. began the great Eighteenth Dynasty (1540–1315 B.C.) in which were built the temples by which Egypt is best known. Little remains of the work of the Middle Kingdom, for the Shepherds had devasted the land, but the traditions of the buildings remained and the new work was developed from them.

Three great kings named Thothmes reigned, and the rock-cut tombs of the kings were begun on the west banks of the Nile. Thothmes I had two sons, Thothmes II and III, and a

daughter, Queen Hatshep-sut, who married her brothers, as was the custom in Egypt, and built a great temple to Amon Re, the sun god, with terraced courts rising one behind another. The center of the hall behind the last court had higher columns than the flanking portions, and was therefore elevated high in the air with windows on its sides above the lower columns. This was the first hypostyle hall (*hypo*, below; *stilos*, column), the hall below the columns, which has been perpetuated in the naves of basilicas and cathedrals. The towers with inclined walls were built on either side of temple entrances. These were the pylons of the Egyptians. The destroyed sanctuary courts at Karnak, opposite Thebes, were restored and rebuilt with great splendor. Thus was the temple plan established. It was a succession of courts entered by a gateway between pylon towers, each court having a shallow, columned hall its full width opposite its entrance, through the center of which the next court was entered. Back of the last court was a hypostyle hall, and beyond this a sanctuary terminating the group, on either side and around which were rooms for priests, minor sanctuaries, and treasure chambers. Around all was an enclosing wall of brick, often without an attempt at embellishment and of sufficient thickness to give space on its top for the people, who ascended by staircases in the wall to look down upon the processions and ceremonies in the courts. The king, who was the chief priest, and became a god after his death, entered the courts with his retinue, was met by the priests, and proceeded to the sanctuary. Religious processions emerged from the temples, crossed to the cities, and returned, and were thus seen by the populace.

Brown sandstone was the building material, but the pictured stories with which the temples were decorated required a suitable background, and court walls, pylons, columns, and ceilings were covered with a fine white stucco, known as Egyptian earth, a silicious earth upon which color blazed. The scenes portrayed were those of actual life, and in hori-

zontal zones one above the other. They were the picture-books of the then known world, recording the life of the nation. Upon the pylons were the conquests of the kings; in the outer courts were the life and industries of the people; in the inner courts the ceremonials of the religion and the figures of the gods. The arts of Egypt, founded upon natural representation, became absolutely conventional, with little change except in the minor characteristics for centuries. It is the most isolated and individual art in the world.

The rooms of the limestone mastabas had been decorated with pictures depicting the occupations of the deceased noble; in browns and reds and blacks and whites, directly upon the limestone, 1500 years before the temples of Thebes; and the same type of figures appeared upon the stucco, but the gamut of color had been increased. To the black of carbon and the red of burned earth were now added the blues and greens of the oxides of copper. The sculptors were of a higher grade than the painters, and all areas to be filled with color were defined by an incised line. This definition of color areas occurs in all early work, and suggests that painting was considered merely the art of artisans. When, as on the mummy cases, there can be painting only, a line is drawn in black bounding the colors.

The great imperialistic Nineteenth Dynasty of Egypt followed (1313–1225 B.C.). It had as its kings Rameses I, his son Sethos I, who conquered Syria and carried the art of Egypt far into Asia, and Rameses II (1292–1225 B.C.), the most celebrated of the Egyptian kings. Many of the Egyptian temples now existing were built or enlarged in his reign. His greatest work, again a wonder of the world, was the completion of the hypostyle hall at Karnak, 388 feet wide, 170 feet deep, with great central columns, 136 in all, rising 70 feet in the air, crowned with those bell-shaped capitals which are among the most beautiful in the world. Above, the ceiling is blue, studded with stars, and the capitals are blue, green, and red; the columns are zoned with figures and

hieroglyphs in color. For the Egyptian had created a sign language of symbols and syllables, which was the beginning of the alphabet.

Thebes was the great city of the world in 1200 B.C., for through her gates poured the commerce of the known world and many races already mingled in her streets. Semitic traders, swarthy and bearded; Hittites and Assyrians; Ethiopians, black as coal; Phoenician seamen, and here and there a slighter figure, smooth faced, lithe, and moving swiftly — one of the "sea-peoples," forerunners of those Greeks who were to be the intellectual masters of the world. All of them watched the king's soldiers passing in and out of the gates with standards and symbols, going to or returning from the far-flung boundaries of the empire, and the long, many-oared barges with colored sails on the river; or they passed across it, joined the processions to the great temples blazing in color in the hot sunshine; and mounting the walls they may have seen the king himself go to the sanctuary. Great was Thebes of the hundred gates, and her temples are still eternal amid the desert sands.

Rameses II also carved in the glens at Abou Simbel, 170 miles south of Thebes, two temples side by side, high above the river-bed in the sheer cliff. Before one of these are his seated portrait statues 65 feet in height, the most stupendous, colossal figures in existence. But the imperialistic spirit of Rameses II and the aggressions of Egypt were to cause her downfall. His successors being weaker than he, were controlled by the priests, who were poor warriors. Asia was lost, the Ethiopians pressed in from the south and ruled for a time; the Assyrians came from the east; and then Cambyses, the Persian. When Persia fell came Alexander, in 334 B.C., and on his death was formed the kingdom of the Ptolemies.

The Ptolemies were 16 in number, the last the son of Cleopatra and Caesar, in 50 B.C. They built temples at Philae and at Edfu in the manner of earlier work, but with them the architecture of Egypt disappeared from the earth,

ROCK-CUT TEMPLE AT ABU SIMBEL, EGYPT

PLATE 4

THE TEMPLES AT PHILAE, EGYPT

PLATE 5

except as an obsolete art. It had, however, given much;—great courts surrounded by columns upon platforms and terraces; vast columned halls with clerestories; symmetrically planned buildings, impressive entrances, finely proportioned and fluted columns, pictorial zones of painting and sculpture, decorated and finely profiled mouldings; dignity, colossal scale, and majesty, all with noble conceptions and without trivial pettiness; and the minor arts of metals, of glass, of ivories, of cabinet work; the discovery of copper, the beginnings of written language, and the establishment of a stable government; all of these can be traced to Egypt.

III. MESOPOTAMIA, BABYLONIA AND ASSYRIA

The land of Mesopotamia (between the rivers) was the site of the great oriental empires of Babylon and Assyria. The rivers Tigris and Euphrates flow southeasterly nearly parallel for many miles, and, finally uniting, enter the Persian Gulf. The great plain between them had a population of small city states like the nomes of Egypt, probably at as early a date. Struggles between the small cities took place at the time of the Old Kingdom of Egypt, from 3000 to 2000 B.C., and finally there arose to dominance Babylon, whose kingdom lasted 900 years. On the foot-hills of the mountains where the Tigris rises were settled descendants of Semitic nomadic peoples. They, the people of Assur, called themselves Assyrians, and became the most powerful kingdom of central Asia, overcame Syria in 1480 B.C., and came into contact with Egypt, and in 1100 B.C. overcame Babylon.

Babylon was the earlier civilization, and its architecture influenced the later work. It was a sacred city, and when taken by the Assyrians was not destroyed. Rising in a land with few trees and far from stone, it was built of sun-dried brick, terrace upon terrace, upon a base platform 20 feet to 30 feet high which raised it above the inundations, and the

Assyrians in building followed the same precedents. These platforms, very carefully and skilfully laid directly upon the soil and drained with arched conduits, were ascended by ramps. Their corners corresponded to the points of the compass, and their perimeters were crowned by parapetted walls, crenellated, with a ten-foot space for the circulation of the defenders back of the walls, and between them and the buildings. The buildings themselves were one story in height, though corner towers of two stories occurred, and the effect, excepting for large scale, was probably not unlike that of Indian pueblos. The town was usually upon the lowest terrace, above which arose the second terrace for the palace, harem, and offices. Near one corner of this was a still higher terrace upon which was the zuggurut or tower, likewise built in successive terraces, on top of which was the altar and fire to the gods of the air.

The sun-dried clay bricks under the action of rain were resolved into masses of clay, and consequently their exposed surfaces were protected either by kiln-burned brick, or by colored glazes, while the platform walls were faced with limestone. The palaces contained enormous ceremonial courts, surrounded by a great number of small narrow and dark rooms opening into each other, interspersed with minor courts placed irregularly. The plans therefore are labyrinthine without symmetry, large masses only being isolated from each other. The rooms were roofed by small beams, placed close together and covered by clay forming flat roofs. The great entrance gateways to the walls and from the courts were an important feature, and were arched and flanked by colossal carved human-headed bulls.

Nineveh of the Assyrians was the seat of a despotic empire, which adopted the policy of exterminating the cities it conquered, and aroused such hatred that at its fall in 605 B.C. it was absolutely destroyed by Babylon. The walls of Nineveh arose above the limestone terrace from an arid plain, and blazed in color against the background of the yellow bricks

of clay. Through the high arched gates passed the armies of barbaric kings with chariots and horses, and the black-bearded, heavily-built Semitic people swathed in encircling garments of red, green, and gold, enriched with Egyptian patterns, lined the roads and looked down from the walls at the mighty hunters returning from their lion hunts. At times the great gates closed, when attacking hordes beat against the walls. A people grosser than the Egyptians, implacable and cruel, they held the land for a thousand years and contributed to architecture the high arched gateway and glazed tiles and faïence; while farther west in Asia Minor other Semitic peoples, the Hittites, whose capital was Carchemish, built hill cities of stone as did the Greeks later, and beyond these were the sea-going Phoenicians whose ships spread the trade of Asia across the Mediterranean Sea.

IV. PERSIA

The Persians were of the same Indo-European stock from which the Greeks sprang. This stock came from east of the Caspian Sea at the time the tribes were changing their lands, and at that time divided, some going south into India, others into the mountains northeast of Mesopotamia. They were a more subtle and idealistic people than the Semites and their religion recognized the two opposing principles of good and evil. By the time Nineveh fell before Babylon, 606 B.C., they had established a kingdom of the hills, and Cyrus in 550 B.C. built his capital at Pasargadae and began to invade the weakened Mesopotamian empire. Within four years he had conquered everything as far as the Mediterranean excepting the stronghold of Babylon, and in 539 B.C. that also was taken. Cyrus was killed in battle in 526 B.C., Cambyses, his son, extended the empire by overcoming Egypt, and his successor, Darius I, attacked Greece. Persia had now taken the place of Assyria as the great oriental power. Darius I built his capital at Persepolis.

The Persian kingdom lasted from 550 B.C. to its conquest by Alexander in 330 B.C., and during this period developed a unique type of architecture expressed by large halls with wooden columns and roofs with but little expanse of walls, in contradistinction to the Assyrian type which was all walls. In place of the thick walls to keep out heat of more torrid lands, were substituted open pavilions through which the mountain breezes swept. These open-air halls were many-columned, that of Darius having 100 shafts. The roofs were flat, of wooden beams covered with clay. The stone palaces had delicate columns of stone which maintained the slender proportions of the earlier wooden columns, and the wooden brackets supporting overhangs were repeated in stone tombs cut in the rock. Great basic platforms were built as in Assyria, but were approached by vast and broad stairways.

The religion required no temples, the sacrificial fires were in the open air and raised upon tower-like altars. There exist tombs of the kings, that of Cyrus a small cell like the earliest Ionic temples. The government of Persia was a military despotism, and the pomp and ceremony of the court made the cities spectacular in interest and brilliant in color. Caravans were constantly arriving from China and from India. Rich blues and gold are associated with Persian work, which was always wrought with great delicacy. Everywhere was rapidity of movement, rushing bands of horsemen, fluttering banners, contests in horsemanship and in archery, hunting parties with hooded hawks on their wrists; the whole a shifting kaleidoscope of radiant tints and vividly costumed people which has its counterpart today only in India.

V. GREECE

Crete, the island midway between Egypt and Greece, had from 1800 to 1400 B.C. many cities, of which the chief was Knossos. The buildings were labyrinthine in plan, one story in height, of sun-burned brick covered with stucco, as had

been those of Egypt. This architecture showed Semitic and Asiatic precedent. Men from Greece took Knossos in 1400 B.C., and the power of Crete declined, while two small commercial cities in the southern portion of the Greek peninsula rose into prominence, Tiryns and Mykene. The latter was the city of Agamemnon and Clytemnestra at the time of the Trojan wars. They were walled towns, with the king's palace a citadel erected upon the highest available eminence, the earliest development of the acropolis (high city), which, with its propylaea or "vestibule" became so charactertistic of Greek cities. The town surged up around the base of the acropolis wall, having narrow tortuous alleys between roughly built houses of rubble, for no permanency of character was sought in ordinary dwellings. The market place, or agora, alone was spacious, and later became a civic center, the prototype of the forum of the Romans. The city wall now became a feature of all cities until the invention of gun powder made it useless.

Gradually similarities of religion, common ancestral legends, Homeric song, and means of communication by an alphabet borrowed from the Phoenicians, which was creating a common language, tended to harmonize and unite the warring factors, but the Greeks were always weak as a nation because of their internecine strife. They now began to call themselves Hellenes.

The earliest invaders arriving in Greece, which was sea girt, dreaded the sea, but little by little accustomed themselves to it and timidly ventured from port to port along the coast, gradually becoming famous mariners. Their commerce, which was no longer confined to an interchange between small cities, began to spread over the eastern Mediterranean and to compete with that of the Phoenicians. Colonies of Greeks were now flung across the sea as colonies of the Asiatic Semites had been in the preceding centuries. They appeared on the coasts of Asia Minor in the garland of islands known as the Cyclades, and upon the African coast

and in Sicily and southern Italy, later known as Magna Grecia. Their colonial cities were cities of the sea, coast towns upon mountain sides and promontories, with their feet laved by the waves and their temples high in the air. They received supplies from the home states, in which now arose industries beyond the need of the adjacent lands.

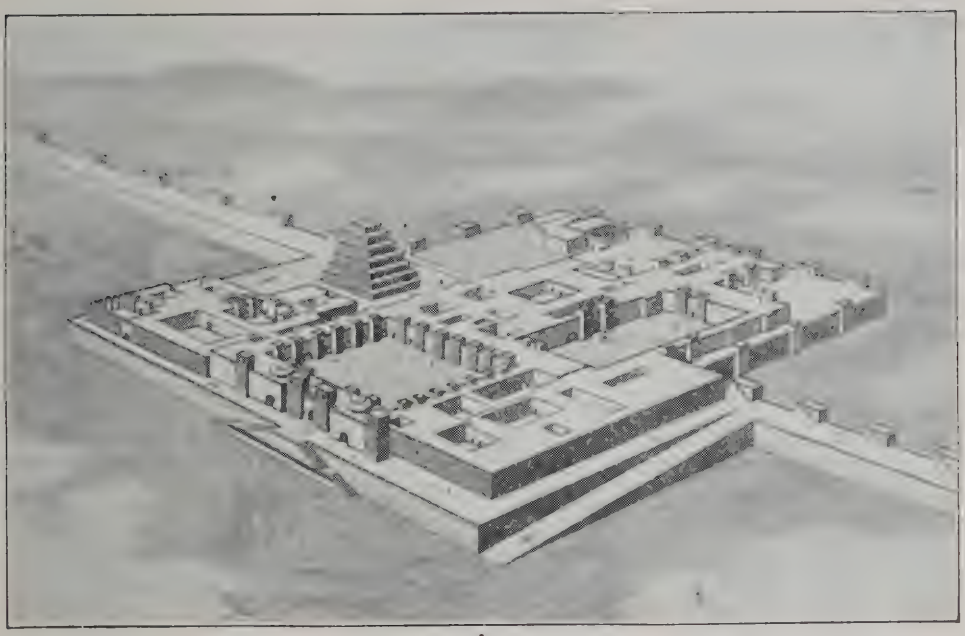
The manufacturing of textiles, of pottery, and of metal work flourished; and the reputation of Greek handicraft and arts increased. Barter required a universal medium of exchange, which first took the form of silver bars from which pieces were cut off, as were links of golden chains in mediaeval times. The Ionians of Asia Minor regulated the size of these pieces, cutting off flat discs from them and stamping them, thus creating money, which enormously increased the facility of trading. Commerce grew fast, ships increased in size and number, and centers of industry were established, while exchange was made possible by the use of money.

Iron was discovered about 1600 B.C., cut stone of coursed masonry appeared, and stone structures began to be substituted for those of wood. Homer speaks of brazen walls and bases, and silver columns and lintels, and there is every evidence that gold, which was not a rare metal, was lavishly used from this time on. The early wooden temples which had replaced the king's houses upon the acropolis existed at least in 1100 B.C., but the first important stone temples date from the sixth century. During this interval the wood structure was slowly translated into stone.

The sequence of the progress of the Greek shrine or temple building may have been as follows:

(1) A fire floor of stone or brick upon which the sacrificial fire was built and later elevated upon an altar.

(2) A wooden shelter above the fire to protect it from the weather and to prevent its being extinguished. An attempt was at once made to make this shelter incombustible by building it within a cell of stone or of brick, which, however,



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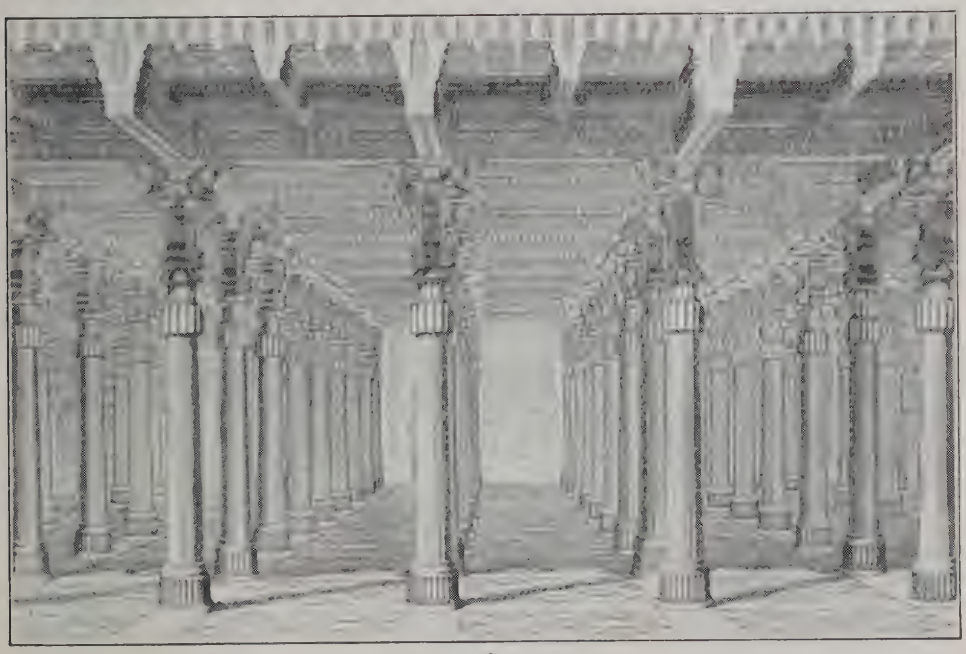
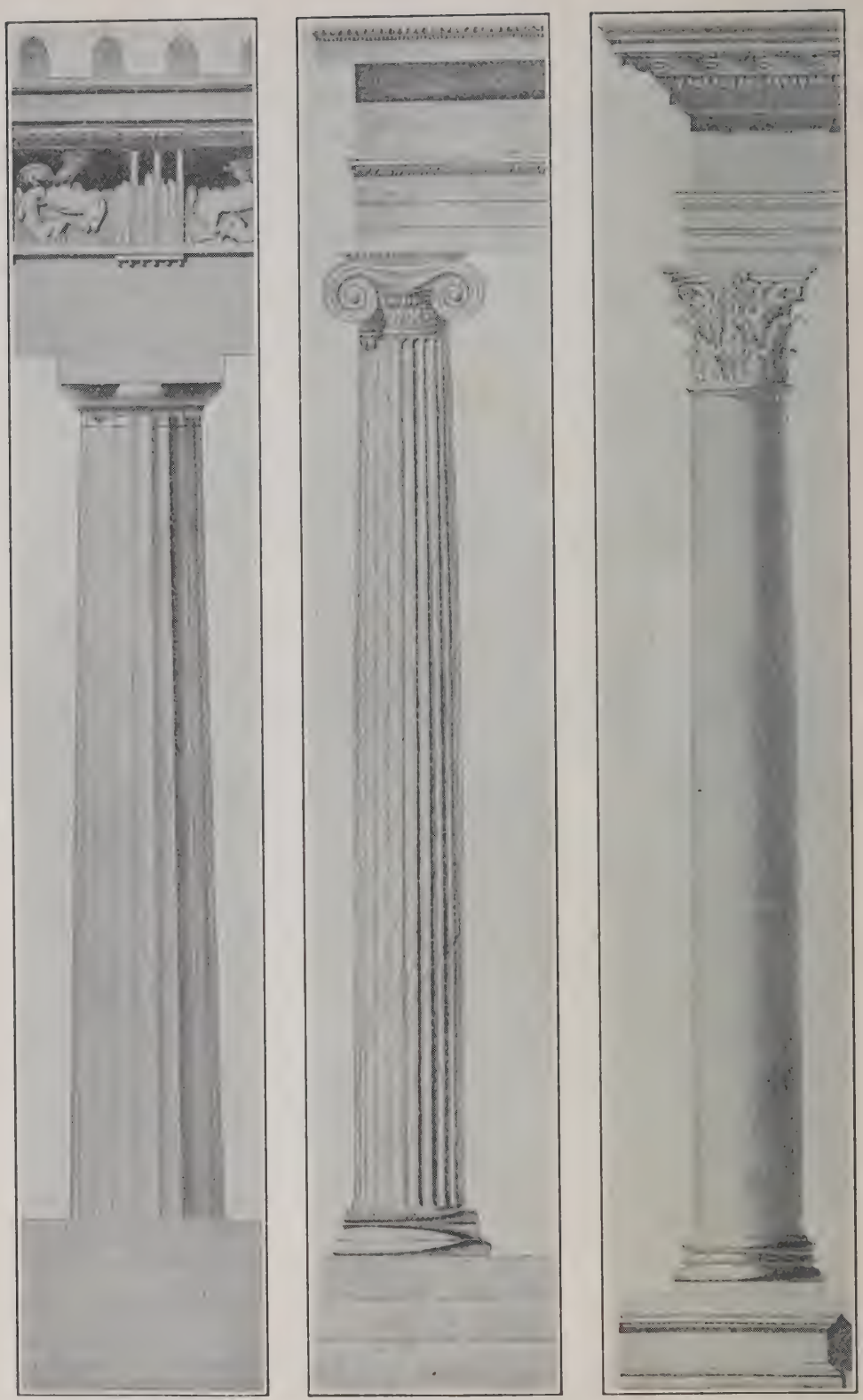


2

1. THE PALACE OF SARGON AT KHORSABAD, ASSYRIA. (Restoration)
2. THE HALL OF A HUNDRED COLUMNS, PERSEPOLIS



Doric Ionic Corinthian

THE CLASSIC ORDERS OF ARCHITECTURE

PLATE 7

was of too insecure a character to safely carry a roof, and required itself protection from rain. Consequently a row of wooden posts supporting a beam was carried all around the cell at some distance outside of it, and the ceiling beams in turn were extended beyond the wall and rested upon the beam above the posts which supported it. No matter what might happen to the clumsily constructed cella wall, the wooden roof would remain supported by the posts.

Wood construction is necessarily of straight elements, vertical and horizontal in elevation, excepting only for the pitch of the roof, required in order to shed rain in countries where it was prevalent.

The so-called orders of architecture, Doric, Ionic, and Corinthian, were derived from wooden columns carrying a beam or lintel upon which rested, at right angles, the ends of the triple ceiling beams of the central cell. These latter formed the triglyphs of the Doric order, on which, parallel to and above the lintel, was laid a beam or plate which in its turn carried the ends of the pitched roof rafters. Four of these rafters occupied the space between every two columns and projected beyond the line of the columns so as to form eaves. This method of wood construction, which was universal in Greece, became as traditional as were Egyptian forms in their time, and when stone was substituted for wood the features and forms of the wood construction were strictly maintained. This change occurred under the Dorians, and the resultant stone architecture has been named the Doric style.

In building in stone the masses of the columns and other features became larger than in building in wood, and as the long spans were impossible in stone, the distances between supports became smaller, and columns, instead of being monoliths, were built up of layers or drums. Cleats which covered joints between wooden members to keep out water, became mouldings in stone. The ceiling beam ends were indicated by the triglyphs.

The elements which compose the Greek temple are each subdivided as follows: the basic platform, the column, and the structure above the column called the entablature. The column in turn is divided into three parts; the base, the shaft, and the capital. The entablature is similarly subdivided into the epistyle, architrave or lintel; the frieze; and the cornice. The Doric frieze is composed of alternate triglyphs, and the spaces between, or metopes. The cornice is divided into three parts: the bed mould, the facia, and the crown moulding or cyma. The impression made by the column is that of elevation or height, of manifest ease in sustaining weight without effort. The impression made by the horizontal lines of the entablature is that of stratified stability which can be readily upheld by the columns, therefore it is never violated by vertical lines carried across its elements, nor is it apparently heavy and burdensome to the columns. The elaboration of detail as the orders develop appears at the lines of demarcation between major elements and accents them. Where the vertical shaft ends and the horizontal lintel begins, the richest ornament occurs in the capital. Where the plane of the frieze is overhung by the projected plane of the facia of the cornice, the bed mould becomes more and more enriched. Where the order is ended at the top against wall or sky, the cyma, ornamented, proclaims the fact.

The initial form of a Greek temple, the form which first took architectural expression, and which for centuries dominated it, was that of a simple rectangular cell. With few exceptions the earliest temples have a long narrow cell, and are peripteral, *i.e.* with columns all around them.

It has been noted that in Assyria the pavilions at the tops of towers had corner square piers, the openings between these piers had two columns, and this system was known as "columns in antis." Whether from Asiatic antecedent or from structural common sense, the long lintel over the vestibule to the cell in Greek temples was supported frequently by columns in antis. It is the only variation from the continu-

ous regular repeat in the use of columns that occurs in Hellenic architecture, for it is reserved to Renaissance architecture to group columns as ornamental features.

The cell or naos of the temple, or house of the god, corresponded to the rectangular megaron or large room of the house of the king, and was either undivided longitudinally, if the span of the roof was short, or else divided by the necessary supporting columns on the center longitudinal axis, or into a central nave and narrower side aisles, by two rows of columns. This is the natural and consistent plan of a broad building, whether in Egypt, Greece, Rome, or in mediaeval times, and becomes the typical plan of most religious congregation halls or churches up to the nineteenth century. In front of the naos proper there was a vestibule or pronaos, usually open, with two columns in antis. In other examples is found also a rear vestibule or opisthodomos, corresponding to the pronaos, introduced apparently from a desire for formal balance, usually without a door into the naos.

As to the elevation, it is obvious that the predominant architectural motive of the Greek temple is a colonnade which carries what is known as an entablature, consisting of the lintel, the eaves or cornice, and the frieze between the two. The same motive is used at the ends with the addition of the triangular shape above the entablature, produced by the gable end of the roof, which is known as the pediment. The entire building is elevated upon a stepped platform or stereobate, usually of three steps. The cell wall is plain, unpierced excepting by the end entrance or entrances. The expression of architecture in Greece is therefore quite different from that of either Egypt or Assyria, inasmuch as it is chiefly that of the exterior treatment of a rectangular geometric solid, rather than that of the interior of a court or a hall. Greek architecture is one of column and lintel, of two systems of colonnade form, Doric and Ionic, perfected by two different branches of the Greek race.

As a general rule the earlier the temple the less the height of

the column in proportion to the diameter, and the less the intercolumniation, or distance apart on centers, of the columns. This is probably due to the tradition of Egyptian colonnades and to timidity in the use of stone in lintels. As the stone of the west and mainland was a rough porous limestone, forms were robust and coarse, lintels were short, and early Doric columns diminish from base to top, with a slight curve called the entasis, but have no base. The Doric order is that of the northern branch of the Greek race and was of the west and mainland, *i.e.* the colonies of Magna Grecia and Sicily and Greece proper, and it was seldom used in the Asia Minor colonies excepting at Delos, which was tributary to Athens.

The Ionic order of the Ionians appeared in Asia Minor, and was fully developed in the sixth century before Christ. It was subject to oriental influences, which were manifest in the capital and in the base of the columns, the dentils in the cornice, and in the carving. The order seems, as did the Doric, to have developed from wooden prototypes, the block and dentils especially being traceable to the ends of small roof beams like those over Assyrian rooms. The triglyphs do not occur, there being only architrave and cornice, with later a continuous frieze, often adorned with sculpture, between the two. The Ionic order is much more delicate than the Doric, the columns being seven and one-half to ten diameters in height, and the intercolumniation as great at times as two and three-quarters diameters. The voluted capital is distinctly oriental in origin, and, like most carved forms, was at first merely painted as a scroll upon a simple wooden bracket block over the columns. The scroll motive was a very early one in decoration, and much used both in Egypt and Assyria. The Ionic order always had a moulded base, the usual form being the so-called Attic base, consisting of two convex mouldings or toruses (*torus*, a rope), with a hollow or scotia (*scotia*, dark) between them. The Ionic order was as distinct, as constant, and persistent as was the Doric. Its influence began to be felt

on the mainland in the time of Pisistratus in the sixth century B.C., and Ionic temples were built at Athens in the middle of the fifth century, but most of the examples are to be found in Asia Minor.

The Corinthian order of the Greeks is not a distinct order but is merely the result of invention, and the addition of certain factors which could replace those of the Doric and Ionic, and give them greater enrichment, especially in carving and in the capital. The constant characteristic detail of the Corinthian is the cap, an inverted bell surrounded by two rows of alternating acanthus leaves, with paired scrolls or volutes supporting the corners of the abacus. This cap, suggested possibly by the late lotus cap of the Egyptians, with which the Greeks were familiar, obviated the corner problems of the Ionic scrolled cap. The additional development of the entablature was the introduction in the cornice of the projecting supporting brackets between the dentil course and the facia, which are known as modillions.

The orders, occurring chronologically, were used in sequence of location in plan, the later order being used upon the interior of the building, *i.e.* the Ionic upon the interior of a Doric building, the Corinthian on the interior of an Ionic building. The earliest use known of an exterior Corinthian order was in the monument of Lysicrates at Athens in 324 B.C. The sequence of decorative processes is the same in all artistic expression. It is first representative, later conventionalized. It is first in two dimensions and then in three; first, painting with defined line and color, then colored sculpture, and finally sculpture without color, for the sake of light and shade alone; and the sequence in the Greek orders followed this natural progression.

The Doric order, like the temples of Egypt, had its coarse limestone covered with stucco which refined its profiles, and gave an admirable background for the color with which it was decorated. Its structural features — shaft, abacus, epistyle, and facia to cornice — were left in the color of the marble or

of the stucco, but the mouldings and interstices of structure were decorated with color. The mouldings occurred at the structural joints, and received ornament in regular repeats which preserved the integrity of their continuous line and of their profiles. The interstices of the structure, the metopes and the pediment, were at first painted but soon were filled with sculpture which was colored.

Egyptian polychromy applied to architecture was almost devoid of gold, which was confined to minor objects. Early Archaic Greek polychromy, excepting at Mykene, had gold used sparingly, but by the sixth century B.C. the influence of the Orient through Asia Minor had materially increased the use of gold. The prevalence of gold in the work of the southern tribes occupying Crete and Tiryns and Mykene had long been apparent, but the northern Dorians were slow to adopt it upon their buildings except when they were affected by oriental influences, and retained their primitive polychromy of red, blue, black, white, and maroon. But as time progressed the polychromy of Doric temples became more delicate and less in area, and much more gold was used. The sculpture, which was a necessity to the Doric work, became wonderfully beautiful, and with the advent of the Ionic style polychromy appears less and less; the sculpture is left uncolored upon a colored background, and carved ornament replaces the painted ornament of the Doric upon the mouldings. The Corinthian order was probably decorated by gold only.

There were hundreds of early Greek city states of which the only points of union were those of religion and commerce. The oracle at Delphi was consulted by all, and further unity was obtained by the establishment of the Olympic games at Olympia as a common meeting place where were the treasuries of the sixteen important leagued cities; and finally by a written language developed from the alphabet of the Phoenicians. The three great centers which tended to unify Greece were Olympia, Delphi, and Delos in the islands. At each were

sacred enclosures around the temples of the gods, and the buildings devoted to the games which brought all the citizens of the Greek cities together in festival and council. Of the games those of Olympia every four years were the most renowned, and while they were evidently begun as early as 800 B.C., the first which is recorded was on July 21, 776 B.C., by which time they had become Pan-Hellenic, and included competitors from all parts of Greece and the islands. Peace was proclaimed throughout the land for the five days' duration of the games, and the victors became popular heroes. The requirements of the Olympic games influenced Greek architecture, sculpture, and painting. Palaestrae and gymnasia for training the athletes; stadia and hippodromes for contests; and lecture rooms, theatres, odeons, and other buildings for entertaining and housing strangers and the contestants, were all occasioned by the games, while the statues to the victors, literally in hundreds, lined the roads leading to the temples and filled each temple or sacred enclosure. In Olympia all Greek races met and amalgamated, and all the gods were worshipped. The unification of the Hellenes resulted; the great families affirmed their titles, and the federation of independent states made Olympia its capital.

The first temple to Zeus at Olympia was built probably at the same time as the adjacent Heraion or temple to Hera, 1000 B.C. The early Zeus temple was rebuilt with great splendor in 472 B.C., and the Heraion is of importance as it indicates definitely the progress of architecture between 1400 B.C. and 700 B.C. It was undoubtedly of wood, with a cella of crude brick. Its wooden columns were gradually replaced one by one by stone columns, some of which were monoliths, others built up in drums. One of the original oak columns was in place at the time of Pausanias, 150 A.D. The roof was covered with terra cotta tiles, and the entablature above the columns was probably always of wood, as the distance between the columns indicates.

The confederated cities had their treasuries in the sacred enclosure, containing the offerings showered upon the various gods. These were in most cases small square temples with four columns in front only. At the time of Pliny, 60 A.D., there were over 3000 statues at Olympia and an equal number at Delphi. At Delphi, on the slopes of Mt. Parnassus, there was a sacred enclosure and grove dedicated to Apollo, the sun god, and it was also the site of the Delphic oracle which was consulted by all the Greeks and also of the Amphictyonic League, the most ancient confederation of Greek states. The way to the temple ascended in ramps, flanked on either side by treasuries, votive offerings, and long-columned porticoes, while above arose the sheer walls of the mountains.

The pilgrims to Delphi saw the mountains at the base of which the shrines were situated long before arriving at the gates of the sacred enclosures. Stark cliffs of limestone, with deep and shadowy clefts penetrating their walls, made a gray background for the spreading sacred groves of olive and cypress, silver gray and deep green, in the midst of which statues gleamed. From all parts of Greece came all classes of men: Spartans, roughly attired; shepherds, with goatskin capoted capes; Ionians, clad in spotless white, their tunics bordered with embroidered frets; here and there soldiers, or hoplites, with leathern cuirasses and shields and spears, and the priests and priestesses of Apollo. They wandered towards the temple erected upon the highest eminence, its white colonnades casting deep shadows on its walls, its eaves and details sparkling in color and gold; and among marble and bronze statues of the famous athletes and memorials recording great deeds of the time. The white robes shone bright in the groves, processions passed with song and dancing, marble seats invited repose and contemplation of the numberless works of art, and outside the enclosure or temenos, great hostelries were bustling with guests arriving and departing, and the nude bodies of the athletes reflected the sunlight as they

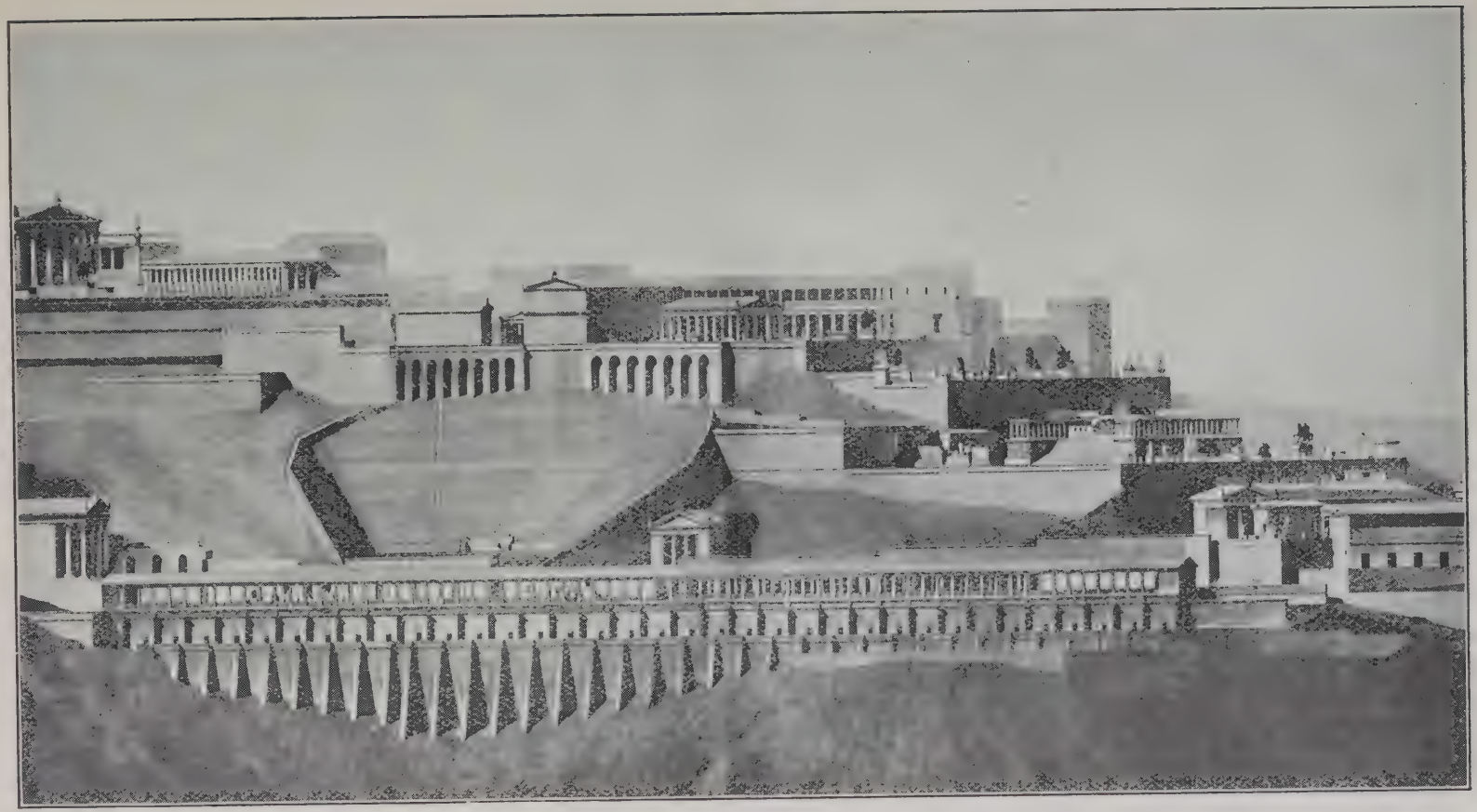
ran and wrestled and flung the javelin either in practice or in the games. The small clean-cut horses in the races were criticized and compared, and constantly the ceremonies of awarding the crowns to the victors attracted an ever increasing crowd. There came also solemn embassies from far cities to consult the oracle, men of eminence dealing with portentous subjects: these passed within the temple and listened for the decision of the god.

Delos was the mythical birthplace of Apollo and Artemis, and its temples were dedicated to both. The institution of its games was ascribed to Theseus. While it was the religious center of the eastern end of the Mediterranean, of the islands, and of the Ionians, it early became the commercial clearing house of the trade of all adjacent lands, had three harbors with encircling moles, and became, under the Romans, the home of great trading companies. From the eighth century B.C. it was closely allied with Athens, and later was the trustee of the monies raised by the so-called Delian League to defray the expenses of prospective wars with Persia; money which was ultimately appropriated to build the temples upon the Athenian Acropolis. The commercial cities of Delos and Corinth were seaports, and the argosies of Egypt, Asia, and Carthage lay within the shelter of the sickle-shaped breakwaters which created their harbors. Tanned and bearded sailor-men fraternized in foreign tongues, and left gifts at the altars to bring them good voyages and in gratitude for escape from the tempests of the sea. Long lines of columns, back of which were tiny shops, led from the quays of Corinth up to the temple and to the agora, where sea-traders met the land-shark, and the shadow of the Acrocorinthus fell across the field of barter in the early morning when the sun had glorified the temple at its summit.

The colonnades at Delos lay parallel with the beach and quays but also led to the temples of Artemis and Apollo, and the loiterers at the shops of the money-changers without the temple gates gazed through the columns upon the turquoise

Aegean Sea, and saw the colored sails fill and the ships bear away beyond the horizon to the mainland. Bales of merchandise lay in the sun; supercargoes and clerks and stately merchants checked the goods bought and sold, and behind the temples were the dwellings of the great trading companies with cloistered courts, lakes, and fountains and all the luxuries of opulence. There were long white walls and terraces, and lines of serried columns, gilded tiles upon the temples, statues in the groves of olives, and always a high place or acropolis upon which arose in gracious beauty the temples of the gods. The theatres opened towards the sea or the valleys, and the spectators saw above and beyond the back scene mountains of far-stretching land and sea; no natural beauty is so great as where the two meet as they do in Greece.

In the middle of the sixth century B.C. Pisistratus gained control of Athens and became a great patron of the arts, to whom Lorenzo de' Medici in the fifteenth century alone is comparable. The Ionians, being the finest artists of the time, he welcomed, and their minor arts led to the introduction of the Ionic style in the sixth and fifth centuries. Every craft flourished, schools of art were established, and Athens became the most brilliant city of the world in its arts; but before its apogee in the fifth century it passed through harrowing vicissitudes. The sons of Pisistratus tried to reëstablish an hereditary line of rulers. Hipparchus was slain, and Hippias found safety in the Persian court of Darius, who, enraged that Athens had sent twenty ships to aid his Ionian subjects in Asia Minor who rebelled against him, invaded Greece with Hippias as his guide. The Persian Wars followed. The victory of Marathon in 490 merely brought on the second invasion by Darius' son, Xerxes, in 480, and despite Thermopylae, Athens was taken and the citadel destroyed, the Athenians fleeing to Aegina. But the battle of Salamis turned back the Persian host, and Athens saved the western world. She, however, became autocratic, the treasuries of the Delian League were taken from Delos, and other monies



THE ACROPOLIS AT PERGAMON. (Restoration)

PLATE 8

THE ACROPOLIS AT ATHENS, (Restoration)

raised by the Greek cities to repel the Persians were appropriated. Athens began to treat her allies as subject-cities, exacting tribute, and the accumulation of wealth was devoted to the rebuilding of her temples as no buildings in the world have ever been built. She was laying up for herself fatal disaster in future years, but in the interval, upon her Acropolis, arose the masterpieces of classic art.

Athens was physically in a favored position as she possessed the essentials of security and prosperity. The site was a hill admirably fitted for defence, to which the populace could retire from the town around its base, and this Acropolis was an eyrie from which invasion by land or sea could be noted long before the invaders were at close quarters. She could therefore support herself, defend herself, and was centrally located for both sea and land trade.

The Acropolis in early times had gathered around its base several villages which became demes, or wards, of the later city. The agora may have been a continuous street of shops or an open square, probably both, on the side of the hill, and above it was a platform where the first plays were given. The city was walled but poorly, the Acropolis wall being strong and considered sufficient. At the northwest of the Acropolis was the principal gate towards Eleusis and Olympia and Sparta, called the Dipylon or two-towered gate. Both inside and outside of this was a street of booths. The streets, like those of all early Greek towns, were narrow and tortuous, roughly paved with unshaped stones, and rambled up and down hill between houses of the simplest description of wood and mud and unburned brick. There are many such streets in modern Greek or oriental villages.

The life was in the open, and apart from crafts and agricultural pursuits much time was devoted to civic assemblies and to religious festivals. Early Athens must have been a teeming crowd of moving people, jostling each other in its narrow ways. Shepherds in goatskin cloaks, shop-keepers and sellers of fruit and vegetables calling their wares, shrill-voiced

women bargaining, money-changers adjusting the values of the coins of different cities, hoplites or soldiers with horsehair-crested helmets, short cloaks and shields slung upon their shoulders, and occasionally a group of horsemen threading their way out into the country, and a law giver or official in a robe whiter than the others, who were mostly in grays and browns, with a troupe of gesticulating friends about him. A provincial people, but intensely in earnest, and appreciative of the beauty of sea and mountain, of color and of the Acropolis and its Temple of Zeus. All this was in charred ruins after the Persian Wars, but the destruction cleared the way and gave the opportunity for the city to rise glorious from its ashes. Thus a great victory and freedom from a long-dreaded menace came to this young democracy, a people of vitality who combined subtlety with discriminating appreciation. They had already attained skill, and had so absolutely determined and conventionalized the character of their work that there was no question of change or doubt as to the types, and they now could devote their entire attention to its perfection. A cosmopolitan keenness of observation accompanied by unity of action is unusual, and this was present in Athens in 470 B.C.

The limestone outcrop about Athens and of the Acropolis was used from early times for all good work above ground, and was covered with stucco. Marbles were used in the rebuilding of the Acropolis, not as facings or veneers, but solid, as the limestone had been, and similarly set without mortar, the blocks being clamped together with bronze clamps. Parian and Naxian white marble from the islands was used early. These marbles were considered as material for sculpture only, not as building material. Pentelic marble from Mt. Pentelicus, twelve miles east of Athens, was quarried when the rebuilding of the Acropolis began, and immediately used as building material for temples as being worthy of the desired perfection of the work. Pausanias, however, states that the columns of the Parthenon were washed in saffron and

milk to give the marble life from the glistening golden particles of the saffron.

The culmination of Greek architecture was upon the Acropolis. The work was done under the rule of Perikles, and under the direction of the architects Iktinos, Mnesikles, and Kallicrates, and the sculptor Phidias.

Athens was divided between conservatives and progressives, the control oscillating between the two parties. Themistokles, a progressive, who rebuilt the walls of both city and Acropolis, was followed in 471 B.C. by Kimon, a conservative, who continued building the Acropolis walls on the east and especially on the south where the wall is of fine masonry 60 feet in height. He started the foundations of a great new temple. He was deposed in 461 B.C. Perikles, aristocrat and progressive imperialist, built the long walls to Phalerum proposed by Themistokles, and began work on the Acropolis. The inscription recording the order given in 450 B.C. for a new temple of Athena, the Parthenon, for an altar, and for the new gateway or Propylaea was extant in 1676. The world-famous Parthenon was the crowning glory of classic architecture.

All the Greeks were summoned to Athens from the Greek cities and colonies to concert measures for restoring the temples of the gods as a thank offering. The Delians, tributaries to Athens, were forced to devote the treasury of the League to the purpose. The temples were to be that of Athena (the Parthenon) and another temple dedicated to Athena and Erechtheus, within the enclosure that surrounded the spot where Athena and Poseidon contended for the soil of Athens, which contained the sacred olive tree of Athena and the salt spring which appeared where Poseidon struck the rock with his trident. This second temple was the unique compound temple of the Erechtheion. A third temple was outside the Acropolis walls on the bastion guarding the gate, where there had probably been a shrine to Athena of Victory and was the small Ionic temple known as that of

Wingless Victory, Nike Apteros. These temples were the supreme expression of religion, of triumph, and of gratitude, and to them were devoted the noblest efforts and skill of the great artists of the time. The Parthenon was begun in 454 and was completed in 438; the Erechtheion, begun in 430, was never wholly completed, and the temple of Nike Apteros was built 435 B.C. They were all of Pentelic marble.

The Parthenon upon a base or stylobate, part of which was cut from the rock of the Acropolis, was 101 feet by 228 feet; a Doric temple, with eight columns on each front, and with 17 columns on the sides. It had the usual established divisions of the cella, first a pronaos with six columns through which the naos or cell, the abode of the goddess, was entered. This was divided into a nave and aisles by two rows of Doric superposed columns, ten in number, with three similar columns closing the end of the nave. The statue of the divinity was at the end of the naos; in the Parthenon it was that of Athena Parthenos, 40 feet in height, one of the masterpieces of Phidias, brilliant with ivory and gold and precious stones. The third division was the opisthodomos, beyond the naos, the treasury of the temple, containing gifts and offerings and objects of historic interest.

The subtleties of measurements, in entasis or profile of columns, relative proportions of parts, crowning of horizontal lines and the sections of mouldings are of the most delicate description, and show the infinite care and pains by which the Greeks obtained fine harmonies and obviated optical illusions. The most important sculpture was that of the pediments, and there the hand of Phidias is manifest. With the exception of the frieze and west pediment, all the subjects, as was usual in the sculpture of Greek temples, related to the mythical contests of the land.

The temple of the Athena of Victory, or of the so-called Wingless Victory, is Ionic, and one of the earliest in that style in Greece. It is small, only 18 feet by 27 feet, with four columns at each end and none on the sides.

THE PARTHENON, ATHENS

PLATE 10

THE ERECTHEION, ATHENS, PORCH OF THE MAIDENS

THE ERECTHEION, ATHENS, SOUTH PORCH OF THE CARYATIDES

The Erechtheion was upon the site of the palace of King Erechtheus. The original temple was burned by the Persians in 480 B.C. The Erechtheion is unique in Greek architecture as it is a group of cells instead of one; it is three temples in one, and is on three levels with porticoes east, north, and south. It was altered by the Romans, made into a church by the Byzantines, and used as a harem by the Turks after 1454. The east and north porches are Ionic, most exquisite examples of the style; that at the north having the finest existing Ionic capitals. The south porch is the famous one of the Caryatides, the maidens of Athena.

Before the Nike Apteros temple and the Erechtheion were begun, and as soon as the Parthenon and the statue of Athene Parthenos by Phidias were dedicated, Perikles devoted himself to building a noble entrance to the enclosure of the Acropolis, the Propylaea. The Propylaea, or advance gateway or vestibule of the sacred enclosure of the Greeks, is a direct descendant of the fortification entrances of early cities with their outer and inner gates as at Tiryns, Mykene, and elsewhere. The Propylaea had colonnades at both entrances, and at times, as at Athens, on the sides of the central passage. Through these noble portals the visitors to the shrines and the religious processions passed from the life of the city to that of its sanctuaries. As the great gateways rose above them, and the shadows of their ceilings darkened the throng, the invisible barrier between the material and the spiritual was epitomized by their guardian colonnades. Behind and below was struggle and barter, and the cares of the world; beyond were the temples of the gods, girded with columns, serene in the sunlight which touched them the first at dawn and glorified them the last at sunset.

The Greek temple itself is unique in the buildings of the world. It is a unit complete in itself, a perfected work. It has a fine disdain for any effect to be gained by association, or relation to an adjacent monument. It had the simplest of forms and the most subtle and delicate proportions, which

were based upon the most careful consideration of arithmetical and geometrical relations. The studies of Pennethorne and Penrose, and more recently of Hambridge, prove the knowledge, skill, and methods of procedure.

Athens, while rebuilding her temples,was teeming with life and activity. The opposing parties, conservative and progressive, were both united in their enthusiasm and in their gratitude for triumphs and victories. The interest in the work was undoubtedly intense, and the western approach to the Acropolis was the congested point at which were concentrated, from dawn to sunset, the materials for the work and the incoming and out-going ox-drawn carts with limestone and marble and supplies. The dry dusty road from Marathon led to the city gates, and for twelve miles was busy with life. On the slopes of Mt. Pentelicus the marble quarries gleamed white as the great blocks of stone were split from their beds, and on wooden rollers were laid in rows to be lifted into the carts by levers and ropes. The slow white oxen began their long pull to the city in a continuous line. Some, and probably most of them, passed to the south of the Acropolis at which point were the stone cutters' yards from which a constant sound of hammers and chisels arose all the day. The finished stones were rolled up the western slope where the Propylaea was to arise, as soon as the Parthenon was completed and the way had no longer to be kept open, and were delivered to the builders.

The temples were slowly arising, the entire Acropolis swarming with workmen. Stone cutters, chisellers, laborers, metal workers setting bronze clamps as each course of stone was laid, all had their shelters, their fires around which they gathered for meals, and some of them must have slept upon the Acropolis. The shrine of the wooden statue of Athena from the destroyed temple, under a temporary roof for protection from storm, was still the most sacred place in Athens, and the religious ceremonies went on as of old and the people came up from the city and the agora to the shrine, mingling

with the workmen, peering with interest at the work, and especially at the studio sheds where Phidias and his pupils were modelling the immortal sculptures of the Parthenon. The Greek has always been loquacious and critical, and the unqualified admiration of later generations was not then universally given to these masterpieces. Especially the old retainers of Kimon were disposed to resent the omission of Theseus and of Herakles from the sculpture, and the aesthetic Ionians must have murmured that Apollo was but little considered in the conceptions of Perikles and Phidias. Arguments were rife then as now, but died down as Perikles himself, god-like in appearance, and wearing the helmet which concealed his defect, that of a high dome-like head such as Sir Walter Scott had centuries later, came with his friends to consult with his architects, Kallicrates, old and white and worn, and Iktinos, sturdy and black-bearded. But still the temples rose, white against the burning blue of a clear sky, until Aegina, across the gulf, the rival of Athens, saw herself surpassed, and from the roads from Eleusis, from Marathon, from Phalerum, the port, and from far out at sea the walls of Athens shone, crowned by the temple of Athena. Her colossal statue with its gold-tipped spear was a beacon to the mariner as it shone in the rays of the western sun. The city of the violet crown, exquisite, beautiful, unrivalled, had raised her thank offering, her memorial, and her tribute to her goddess.

The progress of Greek architecture in the succeeding centuries was toward great delicacy of work and increasing carved ornament, and in Asia Minor toward enlargement and symmetry of plan. The Doric style was superseded by the Ionic, and later by the Corinthian; and the circular building, or tholos, and the columned streets of Alexandria and of Ephesus appeared as favorite architectural motives.

The supremacy of Athens was short lived. War drained her energies, Philip of Macedon became conqueror of the Greeks, and Alexander the Great, his son, invaded Asia Minor, taking

all the Ionian colonies in a year, and, marching east, put to rout the armies of the Persians under Darius III, in 322 B.C. Immediately there was a revival of architectural grandeur. In Asia Minor there is a long list of marble Ionic temples built during what is known as the Hellenistic period, of which one of the largest and most important is that of Diana at Ephesus. Another famous monument of the time was the tomb of Maussollus at Halicarnassus, built in 353 B.C., from which the term "mausoleum" is derived. It was 88 feet by 119 feet, consisting of a lofty sculptured pedestal or podium on which was a peristyled cell terminated by a pyramid of 22 steps, with a chariot and four horses at the apex.

VI. ETRURIA

The unsettled condition of the entire eastern end of the Mediterranean from the fifteenth to the eleventh century B.C., caused the shifting of peoples to the western and newer land. The Semitic and Egyptian menace was constant, and emigration by sea occurred as far as the gates of Hercules — the modern Straits of Gibraltar. The Etruscans who occupied central Italy before the Romans may have been Semitic emigrants who came by sea, and a still earlier people, the Umbrians, may have been of the Indo-European stock from which the Dorians came. At all events the two assimilated and were in possession of the land when later Asia Minor colonists, uniting with local tribes, became the ancestors of the Romans. The Etruscans established strongly fortified hill-towns, like the Achaeans of Greece, and their walls resembled those of Mykene as did their tombs. They used the arch above ground for their entrance gates to the cities, building of stone as well as of brick. One of these arched gateways remains at Perugia. At Chiusi the tombs are large tumuli. At Corneto the tomb chamber below ground is like the room of a house, or atrium, and is lighted through a hole in the slanting ceiling on which are painted roof rafters in red-brown,

1

2

1. GREEK THEATRE AT EPIDAURUS FROM ABOVE
2. GREEK THEATRE AT EPIDAURUS FROM WITHIN

1

2

1. TEMPLE OF JUPITER, ROME
2. TEMPLE OF JUNO, ROME

indicating that the early tombs had wooden roofs. From the evidence of these tombs which imitated the dwellings, and from the frequency and ease with which the towns were burned, it is evident that most of the Etruscan work was of rubble and wood.

The Etruscans were skilful in terra cotta, firing it in large pieces. Their temples had wide and shallow cells instead of narrow and deep ones like the Greeks; at times there were several cells side by side. The peristyle was absent, columns being confined to a deep portico on the front, which was frequently one-half the depth of the temple. The distance apart of the columns was great, showing that large wooden lintels were easily obtained, and that above the columns the structure was of wood. There was frequently a pediment upon the front only, the roof being hipped at the back, and little attention was paid either to the back or sides. The temple was raised upon a platform approached by nine to twelve steps which led between buttresses to its entrance. The columns were unfluted, had a crude base, and a cap which seems to resemble the Greek Doric capital.

VII. ROME

Roman as distinct from Etruscan architecture can be assumed to start with the Conquest of Greece, about 146 B.C., and extends to the time of Constantine, 320 A.D. The ascendancy of Rome in the ancient world began to become apparent 200 years B.C., and it was at about that time that she adopted and adapted the forms of Greek architecture, assimilated them with the Etruscan forms which she had already appropriated, and formed from the two an architecture of her own, which culminated in the first 200 years A.D. Few new features of architecture were created by the Romans, but in the assembling and development of already existing features they were masters and creators, especially in the use of the arch and its progeny, the vault and the dome.

The orders of architecture with the exception of the so-called Tuscan, which was apparently derived from the Etruscan wooden columns and caps, were imitated from the Greek orders which were most in use at the time of the Roman invasions of Greek lands, that is, in the second century B.C. and were therefore Ionic and especially Corinthian, which was the favorite order of the Romans, but they were more elaborate than the Greek orders. Greek Doric under the Romans appears only in the south, in Greek colonies, and in work that was done by Greeks in Cori and at Pompeii. There is usually sumptuous carving and ornament in excess of cultivated taste in Roman work, proportions are carefully studied, but profiles and mouldings lack refinement.

With the conquest of other states and the sovereignty of Rome over many peoples, the demand for buildings adequate for the control, the entertainment, the religious functions, and the accommodation of large communities, became greater than had previously occurred in the world's history; and the arrangement of plan, the spaciousness of environment, the size of single and of grouped units, increased correspondingly; the conceptions of architectural requirements broadened, and buildings and cities became vast. There is little doubt that the inspiration towards large scale came from the great individual cities of Asia Minor, Antioch, Ephesus, Miletus, and Pergamum of the Eumenides, but, these once appreciated, the work of the Romans exceeded that of their predecessors. With the exception of the mediaeval cathedrals, no architecture until modern times has approached the amplitude and grandeur of that of the empire of Rome. Under the kings of the Fourth Dynasty the pyramids of Egypt had arisen, and under Rameses II Karnak reared its hypostyle hall, but these were isolated, unique monuments.

Rome built in generous dimensions; her temples, theatres and amphitheatres, her columned streets, her triumphal arches and monumental baths were everywhere throughout

her domain, while the symmetrical plans of her great fora and of her cities, established a new element in architectural design. This achievement, while it was presaged during the Republic, was not accomplished until the power and wealth of the emperors made it possible under their patronage. It is under the Empire therefore that the typical Roman work must be sought. The great Julian Dynasty, which began under the nephew of Caesar, Octavian Augustus, 24 B.C., lasted nearly a hundred years. Previously, Rome was like a provincial town, in which some civic improvements had been made. Pompey had erected a theatre; the temples of Saturn, of Castor and Pollux, and of Concord existed at the northern end of the Forum, which had been terminated by the Tabularium, 78 B.C., and the temple of Vesta had been burned and rebuilt several times, while above, on the Capitol, the temple of Jupiter Capitolinus maintained its original Etruscan character, being partially of wood.

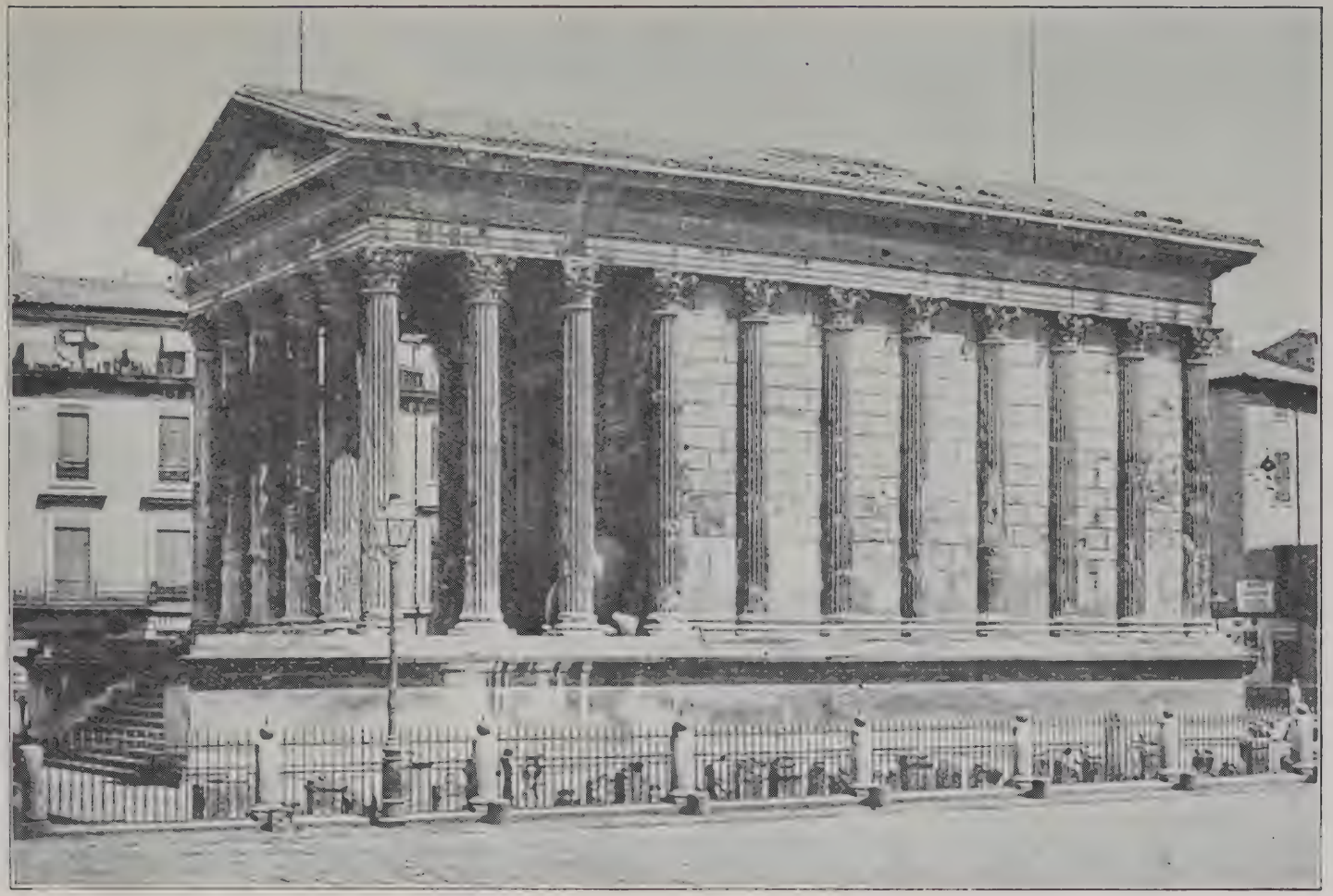
The Forum below the Capitoline Hill was the heart of Rome and of the World. At first the site of struggles between the Romans on the Palatine and the Sabines on the Quirinal, it became later, public meeting place, market place, and Court of Justice. It was merely a level, swampy area between the Esquiline Hill and the Palatine, open to the southeast and with the Capitoline at its head at the northwest. This area was lined on both sides by small wooden booths and shops to which were later added meeting places for discussion of trade and the settlement of disputes. Its center was used for spectacles, horse races, and contests. Captives and spoils were displayed in it. The ward leaders, the curie, had a small hall there, but the Forum was too cramped for large buildings. The rostrum for open-air orations was near by.

Rome of the Republic, from 500 to 50 B.C., was a town of poor character, its streets, tortuous and narrow, its buildings small. In the year 50 B.C., there were only four large and important houses in Rome, 50 years later there were over 100. At the southwest of the Forum was the Palatine Hill, the

home of the patricians and later of the emperors, upon which gardens and small stuccoed houses arose on terraces. Northeast the Viminal and Esquiline Hills were covered with poorer quarters, with narrow lanes and houses rising story above story, full of tiny rooms, veritable rabbit warrens from which the plebeians and slaves poured down into the Forum. Below the Esquiline were the Suburra, the slums of Rome, the quarters that Nero burned. The Armenian who visited Rome two days after the assassination of Caesar and who records the conversation at street corners, makes no mention of the architecture or the splendor of Rome. Life was austere, and one of the patricians was censored for ostentation, because he had columns on either side of the entrance to his house.

The Capitoline Hill in Rome is one of the most famous spots in the world. It is a double hill at the northwest of the Forum, the Arx or citadel to the east; the true Capitoline, the site of the temple, toward the west. Beside the Arx stood the temple of Juno Moneta, or Juno of the Warning. The saddle between these hills (now the Piazza of the Campidoglio) was the gathering place of the people for protest, sedition, and rebellion: here the orators enflamed their emotions and desires, and it became the rostrum of republicanism. Tarquinius Superbus, of Etruscan ancestry, the last of the legendary kings of Rome, began to build the temple of Jupiter Capitolinus on the western and highest spur of the hill in 553 B.C. and it was completed by the first consuls of the Republic. It was an Etruscan temple with gilded terra-cotta tiles laid upon wooden rafters, the cornice, also of wood, being painted in black, white, red, and gold. Within the cells was a terra-cotta figure of the god, draped in embroidered robes, for the Etruscans were past masters of pottery, as were the Greeks. However the statue of Zeus at Olympia was of gold and ivory, while that of Jupiter in Rome was of burnt clay, colored and gilded.

Tarquin's temple was for centuries the holiest shrine in



ROMAN TEMPLE (The Maison Carrée), NÎMES

PLATE 14

TRIUMPHAL ARCH OF TITUS, ROME

Rome, and the goal of the triumphal processions that came to it by the Sacred Way. Rome's generals returning from victorious wars laid their spoils before its altar. It was the only temple left undestroyed by the Gauls in 400 B.C. and retained its Etruscan character until the time of Tiberius. It was finally rebuilt of marble with great splendor by Domitian.

At the base of the saddle of the Capitoline Hill was built the Tabularium in 78 B.C., with arches between engaged Tuscan columns, and with an entablature. Above arose another similar arcade with windows opening into a great hall overlooking the Forum. Superposed colonnades were used by the Greeks. Superposed arches between columns composed with a recognition of the relative proportions of the different orders of architecture were used now by the Romans. The gamut of the possibilities of design was thereby greatly extended. Preëminent are the prolonged arches creating barrel vaults, and the crossing of these vaults which made possible the spanning of great openings and spaces, and at once gave a scale to architecture, an amplitude of space, which with the use of the lintel alone was impossible. Until the time of steel beams and trusses few rooms over forty feet in width could have been covered if the Roman vault had not existed.

Caesar removed all shops from the Forum, acknowledged its use as a commercial exchange, already recognized by the existence of the columned hall of the Basilica Aemilia, and gave additional covered space for the meeting of merchants by the erection of the Basilica Julia, with judicial tribunes at the end, a building which was to furnish inspiration for the plan and section of the western church. He expanded the Forum toward the Quirinal by removing ephemeral structures, and building the first formal forum, a peristyle court with a temple of Venus in the center, which became the type of future fora of the emperors. It had an antecedent in the Egyptian peristyle court of the Twelfth Dynasty, and may

have been inspired by it because of Caesar's knowledge of the Egyptian work acquired during his sojourn in Egypt.

Most of the work of this period was of brick and travertine. Vitruvius, writing 25 years before Christ, lays little stress upon marble, but gives exact information in regard to peperino, travertine, concrete, and brick, and the ways in which they were employed. Upon the accession of Augustus and the creation of the Empire a great change occurred. The statement of Augustus that he "found Rome brick and left it marble" is almost literally true. He had lived his early life in the east, and knew the work of the Hellenistic period, and at once began to make Rome as important architecturally as the Asia Minor cities. They were built of marble, therefore he imported marbles from Paros. He restored and rebuilt monuments of the past, using the elaborate Corinthian order of the late Greek work, and still further elaborating it. But the building materials of Rome were always brick and concrete. Marble was for embellishment only, and was used as a veneer tied into the brickwork behind it, and has been used in most cases in this manner ever since the time of Rome. It is a much more economical method than that of the Greeks, who built their temples of marble blocks, without mortar, and it made possible a much more extensive use of marble in all types of buildings.

Augustus added his own forum at the eastern side of the Roman Forum with the temple of Mars Ultor at its end. His descendants and successors, Tiberius, Caligula, Claudius, and Nero, continued the embellishment of Rome, especially upon the Palatine Hill where noble palaces, terrace above terrace, were erected upon substructures of brick. The work under Augustus had simplicity and dignity; much of the carving was done by Greeks and was restrained in character. As the century progressed restraint and refinement gradually gave place to an increasing luxury and a consequent excess of ornament.

Nero, in his short reign from 54 to 69 A.D., had the most

ambitious schemes for the building of Rome. He contemplated an enormous Golden House spanning the southern end of the Forum, extending from the Palatine to the Viminal Hill. The easterly end of this house would have come in contact with the Suburra, or slums of Rome below the Viminal Hill and the Esquiline, a most noisome locality which he promptly destroyed by fire. The Golden House was short lived, and the Colosseum is upon the site of Nero's proposed artificial lake.

The Flavian Dynasty arose after the decay of the Julian in 69 A.D. Its emperors were Vespasian, who added his forum, and to whom a temple was built near that of Saturn; Titus, to whom was erected the best of the great triumphal arches as a southern entrance to the Roman Forum over the Sacred Way, and who built one of the first of the great baths; Domitian, and Nerva who built his forum.

It was a period of great luxury. The largest quantity of Roman work was in the reign of Trajan, who was a great builder throughout the confines of the now enormous Empire, 82 temples being credited to the period of his 20 years' reign. His great forum, extending north under the slopes of the Quirinal and his so-called Basilica Ulpia, which was a part of it, constitute one of the great examples of monumental architecture for all time.

It was in the reign of Hadrian that the architecture of Rome had the greatest refinement of proportion and detail. Hadrian was a lover of art and deeply interested in that of Greece. He lived at times in Athens, established schools there, and many of the young Roman patricians were there educated, so that Greek refinements were appreciated and reflected in Roman work. In Athens Hadrian rebuilt the temple of Jupiter Olympus and erected an arch, but he is best known for his villa near Tivoli, which was upon three terraces beside the Vale of Tempe, and contained besides his palace, gymnasia, lecture rooms, libraries, theatres, a stadium, and great cloistered courts. Its entire area occupied seven

square miles. In Rome Hadrian erected circular halls covered with low domes of which the Pantheon is the largest example. This type of building for which he seemed to have a special liking, has become the ancestor of all the great external domes in the world, whether they be Byzantine, Mohammedan, or Renaissance. The most celebrated of these buildings is the Pantheon at Rome. A fragment of an inscription with the name of Agrippa is on the portico of the Pantheon, and therefore for years it was assumed that he built it from his large private purse as he did his baths nearby in 20 B.C., but no such building and no such dome arose in Rome for years, and it has recently been discovered to have been built of bricks with the stamp of Hadrian.

Agrippa built a temple with a portico of ten columns of marble with a circular piazza in front of it. Hadrian built his circular building over this piazza, seven feet above it, and practically touching the front of Agrippa's temple, which he then removed and built his portico eight columns wide, using Agrippa's marble columns, entablature and pediment, and supplementing them with granite columns placed behind them. The portico is 100 feet wide, while the rotunda is 142 feet in diameter, and 140 feet high to the top of the dome, and is one of the noblest, simplest, and most inspiring rooms in the world. On walls 20 feet thick is carried the hemispherical dome, a great inverted bowl, with 160 gilded, coffered panels, each with a gilded bronze rosette in its center. The inside wall of the rotunda, which was 69 feet high, was in two zones or orders of architecture. The lower, which was three-fifths of the total height had, in the thickness of the wall, a circular niche opposite the entrance, and two circular niches on the cross axis with white marble columns, distyle in antis; on the diagonal axis were similar but square niches. The arch over the entrance and over the niche opposite the entrance went up into the second zone which was divided into panels by porphyry pilasters, the panels themselves being of colored marbles with borders. This upper zone was changed during

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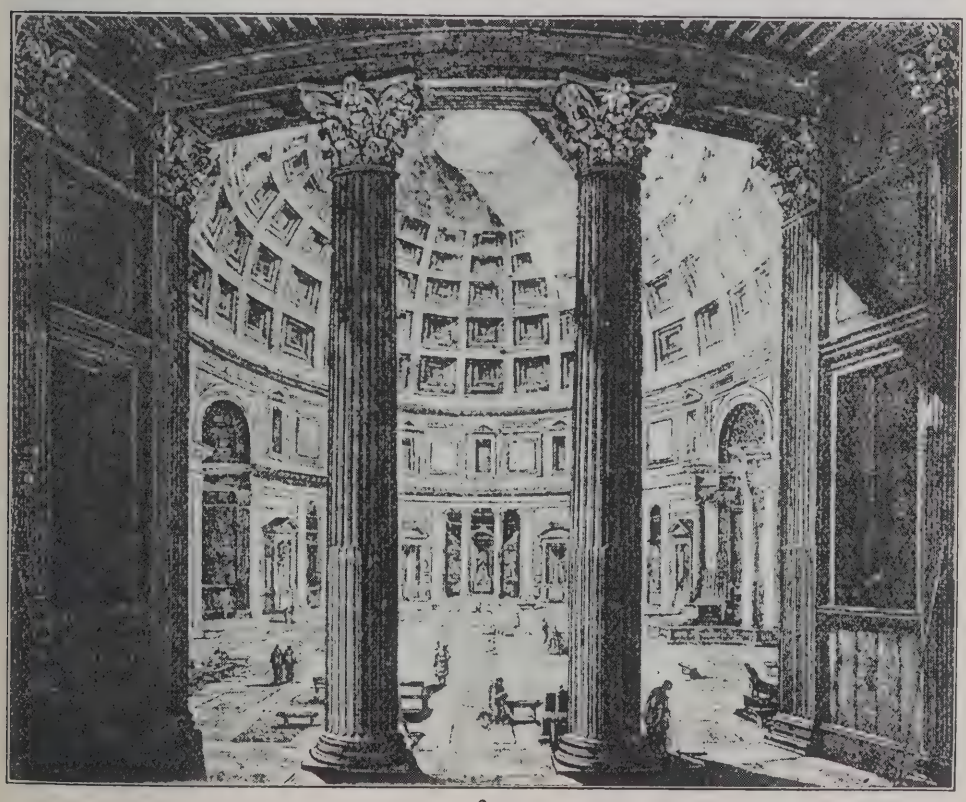

2

1. THE PANTHEON, ROME. EXTERIOR VIEW
2. THE PANTHEON, ROME. INTERIOR VIEW

CIRCULAR TEMPLE OF VESTA, TIVOLI

PLATE 17

the eighteenth century. The rotunda is lighted only by a circular opening 30 feet across in its center, which is said to be far the noblest conception of lighting a building to be found in Europe.

The great bronze doors 30 feet high are still in place, and were originally plated with gold. The gilded bronze roof tiles were used by Urban II to make the great canopy in St. Peter's. The exterior lower story was faced with marble above which the wall was covered with stucco decorated with pilasters. The dome is a marvellous piece of construction. As we have said above, it is the ancestor of all later domes in the world.

Later development of Roman work under the Antonines, 138–161 A.D., was expressed in the attention paid to the embellishment of cities, especially in Asia Minor.

Roman temples were the homes of deities more frequently than they were the halls of worship, and were often used for secular purposes and for exhibition of works of art. For instance, the Temple of Concord was sometimes the meeting place of the senate; that of Castor and Pollux was an office of weights and measures; that of Saturn a treasury, while the Temple of Mars Ultor was filled with statues of famous generals. The cells were usually uninterrupted by columns, four only having interior columns forming aisles.

The largest temple in Rome was that of Venus and Roma, built by Hadrian near the Colosseum; two temples back to back, surrounded by a double row of columns 450 feet by 700 feet, within a peristyled court 650 feet by 1000 feet, the columns of granite and porphyry.

The legend is that Numa Pompilius in 715 B.C. built a wooden circular temple to Vesta, goddess of the hearth, as symbolical of the primitive circular huts, and successive temples to Vesta retained that form. Hence it has been assumed that the circular Roman temple was not derived from the Greek tholos at Epidaurus. The existing Vesta temples are later than these; the one at Tivoli is probably

of the time of Augustus. It has a cella 21 feet in diameter surrounded by 18 Corinthian columns with a fine entablature.

Whereas the Greek theatre was excavated on a hillside, this was only occasionally true of the Roman, but where the towns were on level ground their theatres were built up in tier after tier of seats with vaulted corridors beneath them, the outer corridors being lighted by open arcades; staircases ascending to the seats. The corridors served for shelter in rain as did the covered porticoes of excavated theatres. The arches of the exterior were between engaged columns of the three orders of architecture — Doric, Ionic, and Corinthian superposed, each with its entablature, creating a most impressive motive of architecture which henceforth, whether with the engaged columns or with pilasters only, was universally used in classic work.

The tendency in late Greek theatres was to bring the stage out into the orchestra so that the actors might be near the audience. In the Roman theatre the orchestra was a semicircle with the front of the stage upon its diameter, and the scena, or back wall of the stage, made into a high and elaborate piece of architectural design with arches, columns, niches, and statues, and with a rich wooden cantilever roof projecting at an angle of 30 degrees from its top over the stage. Again in the Greek theatre the scena had no connection with the walls of the theatre, whereas in the Roman it joined them and made one architectural enclosure. On either side and back of the scena were great halls or foyers, used for rehearsals and for shelter from storms. Arcades and colonnades were carried around above the top row of seats, and above these masts were placed from which cords were stretched. On these was run the velarium or awning to protect the audience from the sun. The stage at times was 40 feet deep and 200 feet wide.

The earliest amphitheatre known is that of Pompeii, about 180 B.C., elliptical, and about 300 feet by 450 feet. The largest is the Colosseum in Rome, built upon the site of Nero's

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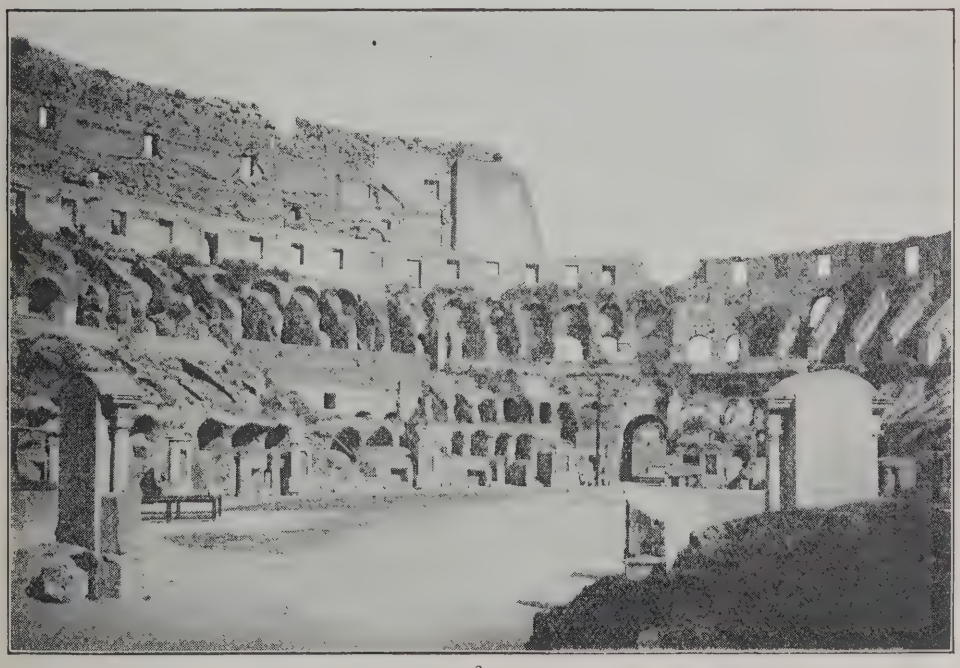


2

1. THE FLAVIAN AMPHITHEATRE, COLOSSEUM, ROME. EXTERIOR
2. THE FLAVIAN AMPHITHEATRE, COLOSSEUM, ROME. INTERIOR

IMPERIAL BATHS OF DIOCLETIAN, ROME. (Restoration)

lake, by Trajan, dedicated by Domitian, and the upper portion and colonnade completed in 224 A.D. by Alexander Severus. It is 513 feet by 630 feet; elliptical, and had 80 entrances. The interior was divided into four ranges of marble seats corresponding nearly in level to the four stories of the exterior. The lower row was occupied by distinguished citizens, the second by the middle classes, the third by the poorer classes, and the peristyle at the top by women. The exterior is of three arcaded superposed orders — Tuscan, Ionic, and Corinthian, carried entirely around the building, and crowned by a plain wall in the fourth story to a height of 157 feet. It is built of travertine set in cement, and presents one of the most monumental and impressive efforts of Roman architecture.

Domitian and Hadrian built stadia similar to those of Greece. The Roman circus, for horse and chariot races, had a long wall or spina through its center, but somewhat aslant from its axis, at each end of which were the goals. It was semi-circular at one end, and had the stalls from which the horses started at the other. That of the Circus Maximus, between the Palatine and the river, was in existence at the time of Tarquin, 520 B.C., and was rebuilt with marble seats by Trajan. It was 705 feet by 2200 feet in length, and seated 260,000 spectators.

Ordinary baths connected with palestrae and athletic centers, and such as are found in Pompeii with small rooms and central basins, hot and cold for both men and women, are said to have been over 800 in number in Rome by the end of the first century A.D. The great baths of the emperors built to ingratiate themselves with their subjects, were dignified by the specific name of thermae. The first was built by Agrippa, 20 B.C., just after Augustus had become emperor. The others are those of Titus, Domitian, Trajan, Caracalla, Diocletian, and Constantine. It may well be that the first four were an expression of victories, but the last three were attempts to placate rebellious subjects. They are the most stupendous

individual buildings in the world, their dimensions being comparable alone to great modern railway stations, and like these stations they were for great conclaves of people who were constantly in motion, and were not only devoted to baths of unusual size and magnificence, but to every kind of popular entertainment excepting those of the theatre and circus. Wrestling, boxing, jumping, etc., all sorts of games; lectures and readings by poets, statesmen, and philosophers, and the dissemination of news, which today is paralleled by newspapers and books, all served to bring the populace to the baths, at which a very large proportion of the Roman citizens' day was spent. Following the established custom of the Romans, a custom which has gone far to make classic architecture stable and monumental, a dominating feature was placed on main and secondary axes to which all other portions were subordinated. In the baths this central unit was the great hall of the tepidarium, or warm room, around which all other halls and rooms were grouped.

The baths of Caracalla can be taken as typical. The square enclosure was about 1200 feet by 1500 feet, the buildings within 400 feet by 750 feet, or about the size of the largest buildings in the expositions of Chicago and St. Louis. The central hall, or tepidarium, was 79 feet by 183 feet, and 108 feet high to the top of the intersecting barrel vaults. It was approached on the side through a parallel antechamber, the frigidarium, or cold room, of similar but of less size. Beyond and opposite the entrance, a smaller antechamber 53 feet by 70 feet led to the circular and domed caldarium, or hot room, 110 feet in diameter. At either end of the tepidarium were hemicycles opening on peristyle courts at right angles with the tepidarium. In addition there were special rooms for athletics, dressing rooms, and rooms for spectators, etc. Across the front of the enclosure behind a colonnade and one-third down the sides, were two stories of private baths, 60 in all. Behind the central block was a space 400 feet deep and 1100 feet long in which games took place, at each end of which

were semi-circular projections with porticoes containing libraries and lecture rooms. At the back was a stadium, behind which were two stories of reservoirs fed with water from the Alban Hills by the Marcian aqueduct. The tepidarium rose above the other halls, and was lighted by clerestory windows. The calidarium was domed. The frigidarium may have had a flat roof with beams of iron covered with bronze and a 68-foot span. The whole enclosure was built upon a platform 20 feet high, and the baths were heated with hot air from furnaces, carried through ducts.

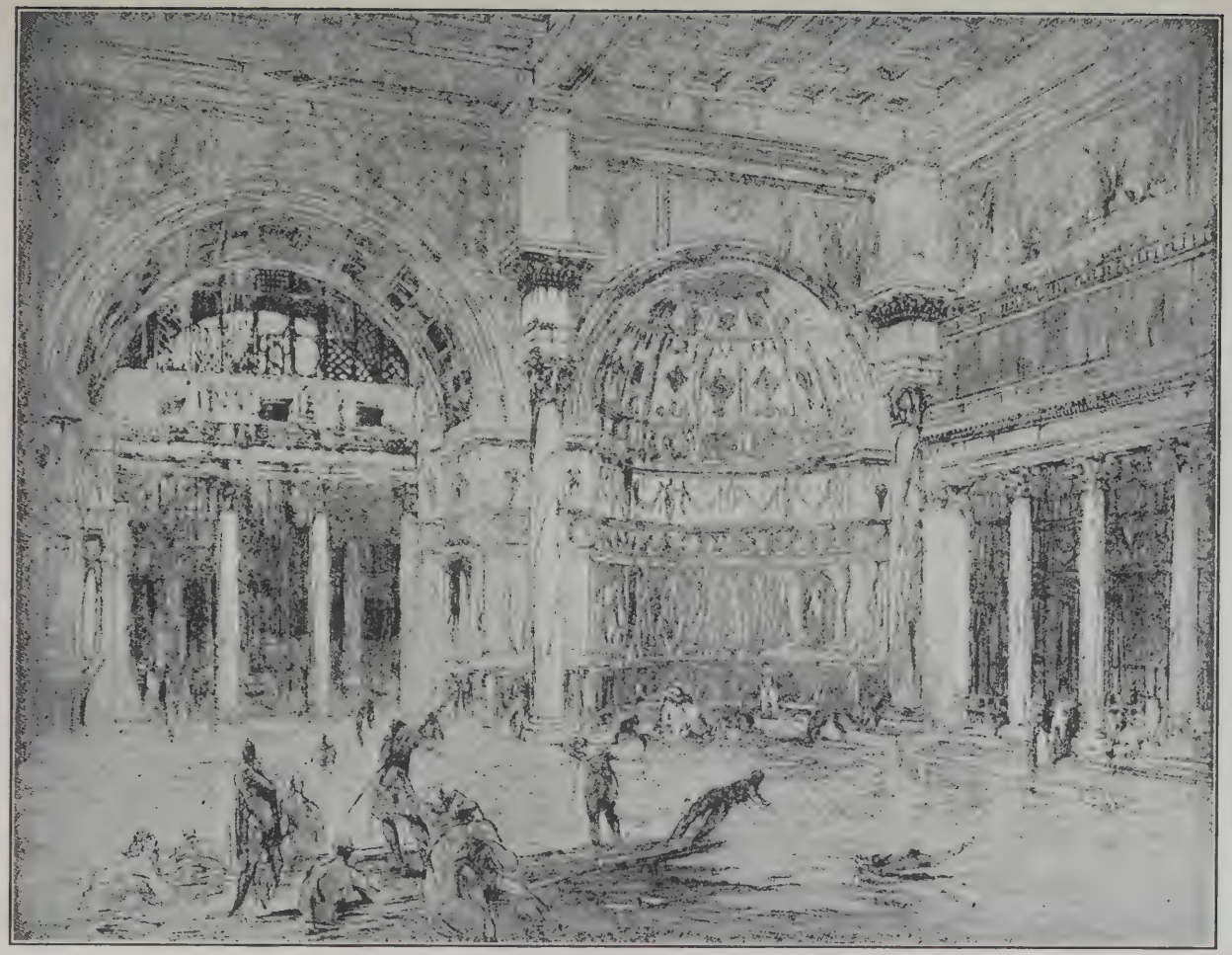
The baths received little attention as regards architectural effect upon their exteriors, but within they had a splendor of gilded bronze, marbles, and mosaics, and there was colored glass in their clerestory windows. Their great columns, carrying coffered ceilings, were of granite and porphyry and colored marbles; their walls were panelled with colored marbles, butterflied as to their veinings for a considerable height, and above to the springing of the vaults veneered in white marble, and the ceilings were incrusted with glass mosaics. The great rooms were decorated with statues in niches. Vast and splendid indeed were these palatial buildings erected by the emperors for their subjects, in which were to be found united the centers of culture. They were the clubs of the literati, the meeting places of politicians, and the social centers of the men of Rome.

The Roman basilicas were courts of justice and exchanges for transacting business. They were vast covered halls, with wooden roofs supported by rows of columns dividing them into aisles. The center aisle was at an early date made wider than the others. At the end of the broad aisle, or nave, and often at the end of each of the narrower aisles, was a semi-circular space in which was a magistrate's seat; this was separated from the rest of the building by a screen of marble or bronze. The best-known basilicas of Rome itself were the Basilica Julia, the Basilica Aemilia, Domitian's basilica on the Palatine, and the vast Basilica Ulpia which formed a

part of Trajan's forum. The other type, roofed by vaults supported upon a few great piers, of which the so-called Basilica of Maxentius or of Constantine is the example, resembles the great halls of the imperial baths.

With the increased size and wealth of communities, private houses with interior courts and colonnades appeared, and by the second century B.C. the house had become of architectural interest. Under the emperors not only were there large houses in Rome, and villas in the environs of cities, but the city blocks themselves — called insulae, or islands — were as carefully planned for private houses as they are today. The destruction of Pompeii in 79 A.D. by hot ashes from the eruption of Mt. Vesuvius was confined to the upper portion of the houses, the lower eight or ten feet in height being filled by the ashes which protected them and kept them intact until modern times. The character of domestic buildings in a provincial town was therefore preserved, and indicates the type of the house of the early empire which was the germ of the large palace. It was two-storied around a succession of large rooms on its central axis, with diminutive rooms on either side. On the street front were small shops, between two of which was a vestibule to the house. The first room upon entering was the atrium with its ceiling open to the sky in the center, and small guests' bedrooms on either side. Next beyond was the cloistered court, or peristylum, the general living space, from which a dining room opened, and beyond was the domestic room and the women's room; beyond which was the garden. Small bedrooms were upon either side and in a second story. The plans varied considerably, but usually consisted of the features mentioned. The walls were stuccoed and decorated in color with great skill.

With the Romans arched entrance gateways and isolated arches were erected to commemorate important events, the difference between them being that the former were a part of the city wall and built of stone, the latter alone by themselves, and built of marble. The arches of triumph, to com-



THE FRIGIDARIUM OF THE BATHS OF CARACALLA

PLATE 20

HOUSE OF THE VETII, POMPEII. (Restoration)

PLATE 21

memorate a victory, were richly designed, decorated with bas reliefs, and were great pedestals for groups of statuary. They are unique and dignified monuments, being entirely idealistic and in no sense utilitarian. The motive was simple, *i.e.* a great fragment of wall penetrated by a noble arch, which would be impressive without mouldings or ornament, and when embellished by the orders of architecture and by sculpture was unusual in its power of expressing dignity and nobility. The arches were usually adorned by a full Corinthian order having engaged columns at the corners and on either side of the main arch. Some are penetrated by a high, major central arch, flanked by lower arches on either side. Above the order the mass forms a high attic story and a pedestal crowned with statues or by a four-horse chariot. The design upon the arches is purely for artistic effect, and in no way demanded by utility or structure.

In many of her colonies Rome created commemorative arches, testifying to her power and splendor. The triumphal arch motive upon a main axis of circulation has been one of the most frequently used of all architectural motives. Other memorials were the triumphal columns, upon which spiralled the bas reliefs depicting the victories "as a papyrus scroll would unroll" (Caesar Daly). That erected by Trajan in his basilica is the most famous. It arises from an 18-foot base 130 feet in the air, and was crowned by a bronze statue of the emperor. The column of Marcus Aurelius Antoninus was in memory of his victories over the Germans, and was erected in 176 A.D. It is similar in character and size to that of Trajan.

The reign of Diocletian completes the epoch of so-called classic architecture. This architecture as it was developed by the Greeks was serene and distinguished, subtle and exquisite in its expression, monumental in its dignity. It passed through many vicissitudes under the Romans, but attained splendor, grandeur of scale, and magnitude of idea. Throughout, the orders which had arisen from elementary structures, were the exponents of its character. At length they were

neglected, violated, and eventually forgotten. Constantine, raised upon the shields of his legions in Britain as Emperor, returned to Rome to make the Christian religion the official religion of the empire, and to erect from the fragments of classic temples the basilican churches of Rome. The pagan classic world had passed away, but its monuments, shattered though they were, had in them still a spirit which, after a thousand years, was to rise again in the Renaissance.

BIBLIOGRAPHY

EGYPT AND ASSYRIA

Bell, E., *Architecture of Ancient Egypt.* 1915.
Breasted, J. H., *History of Egypt.* 1912.
Flinder, *Petrie-Arts and Crafts of Egypt.*
Perrot and Chipiez, *Histoire de l'Art dans l'Antiquité*, 6 vols.; translated by Armstrong. 1883–94.
Simpson, E. H., *History of Architectural Development*, vol. I. 1916.

MESOPOTAMIA

Babelon, E., *Manual of Oriental Antiquities;* translated by B. T. A. Evetts. 1906.
Jastrow, M., *Civilization of Babylonia and Assyria.* 1915.
Robinson, J. H. and Breasted, J. H., *Outlines of European History.* 1914.
Simpson, F. M., *History of Architectural Development*, vol. I. 1916.

PERSIA

Jackson, A. V. W., *Persia Past and Present.* 1915.

CRETE

Baikie, J., *Sea Kings of Crete.* 1910.

MYKENE

Schuchardt, *Schliemann's Excavations;* translated by E. Sellers. 1891.

GREECE

Anderson, W. S. and Spier, R. P., *Architecture of Greece and Rome*, 2d edition. 1907.
d'Espouy, H., *Monuments Antiques*, vol. I, 1896, plates 1–25; vol. II, 1905, plates 1–30.
Gardner, E. A., *Athens.* 1902.
Haverfield, F., *Ancient Town Planning*, chapters 3 and 4. 1913.
Leroux, E., *Les Origines de l'Édifice Hypostyle.* 1913.
Mahaffy, *Greek Notes.*
Rider, *The Greek House. Its History and Development.* 1916.
Robinson, J. H. and Breasted, J. H., *Outlines of European History*, Part I. 1914.
Simpson, F. M., *History of Architectural Development*, vol. I. 1916.

ROME

Anderson, W..S., and Spier, R. P., *Architecture of Greece and Rome*, 2d edition. 1907.

Buhlmann, J. and Wagner, H., *Panorama of Rome.* 1892.
d'Espouy, H., *Fragments de l'Architecture Antique*, 2 vols. 1896, 1905.
d'Espouy, H., *Monuments Antiques*, vols. 2 and 3. 1910, 1912.
Frothingham, *Roman Cities of Italy and Dalmatia.* 1910.
Mau, A., *Pompeii;* translated by Kelsey, 2d edition. 1902.
Pontremoli and Collignon, *Pergamon.* Paris, 1900.
Taylor and Cresy, *Architectural Antiquities of Rome.*

GENERAL HISTORY

Kimball, F. and Edgell, G. H., *History of Architecture.* 1908.
Simpson, F. M., *History of Architectural Development*, vol. 1. 1916.

ARCHITECTURE OF THE MIDDLE AGES

BY

RALPH ADAMS CRAM

CHAPTER II

THE ARCHITECTURE OF THE MIDDLE AGES

I. THE NEW RELIGION

When, in the year 311, the Emperor Constantine issued his Edict of Toleration, a new era of art came into being. Hitherto, and for a period almost as long as that which has passed since the landing of the Pilgrims, Christianity had been proscribed by the state and its adherents subjected to periodical persecutions. It maintained itself in such secrecy as was possible and its services were held either in the rooms of private houses or in the dark labyrinths of the Catacombs or underground burial places. No development of an expressive art was possible, but the two hundred seventy-nine years of virtual outlawry had served to determine the Faith in all its essential particulars, and when at last the ban was lifted it was ready at every point to proceed with the development of an art which would be its own adequate expression.

It was necessary that it should be a new art in all respects for the religion was one which had no kinship with any earlier or contemporary forms. It could not borrow from paganism, or if it did it must transform what it took over into a new thing altogether. The old arts of architecture, painting, sculpture, music, poetry, drama, ceremonial were accepted, for they are eternal, but they were given an entirely new content and a new function. The nature of the new religion was such that the architecture which characterized its buildings had to work out totally new schemes both in plan and in character, and this labour was undertaken at once and carried on by different races and in different lands for the space of thirteen hundred years.

What were the factors in this religion which determined the plan and character of its churches? In the first place, the worship was democratic, *i.e.*, one in which all the faithful took part, each congregation being assembled under one roof; this implied buildings large enough to hold all those of a particular parish or congregation. In the second place the system was sacerdotal, that is, it was administered by priests who acted for all the people. In the third place it was hierarchical, with a carefully graded sequence of officers in an ascending scale of function, dignity and power, — deacons, priests, bishops, archbishops, patriarchs, with, by the time of the Edict of Constantine, the Bishop of Rome as the supreme head and "Vicar of Christ." In the fourth place it was a religion of sacramentalism, that is to say, certain material things "represented from their similitude, signified from their institution, and contained from their sanctification, some invisible and spiritual grace" (Hugh of Saint Victor). There were seven "major sacraments" viz. Baptism, Confirmation, Orders, Matrimony, Extreme Unction, Penance, and the Holy Eucharist, "commonly called the Mass." Of these the last was unique in its solemnity and mystery, for it was not only the Communion of the Body and Blood of Christ but also a Sacrifice commemorating and perpetuating in time the Sacrifice of Calvary. Further, the religion was one which was based not only on firm belief in the Holy Trinity of Father, Son and Holy Spirit, but on an equal belief in a vast celestial hierarchy of angels, archangels, cherubim and seraphim who acted as the ministers of God to man, and on the Communion of Saints, *i.e.*, the unity in effect of the living and the dead, which implied the intercession of the saints (of whom the chief, in a very peculiar degree, was St. Mary the Virgin) and the efficacy of prayers for the dead.

Every one of these tenets of the faith which was then held by all Christians had some bearing on the development of Christian architecture, and when it became possible to build churches in the light of day, they all began to exert their in-

fluence on the raw material which lay at hand in the shape of the buildings of paganism. It was perfectly evident that the temple of the old gods could serve no useful purpose; it was offensive because of its religious associations, but it was also impossible of adaptation to Christian uses since it was comparatively small, badly lighted, and without the separation into definite parts that the new uses and ritual demanded. The alternative was the basilica, a building spacious and open, intended for large assemblies, and already provided with a semi-circular termination which was perfectly adapted to the purpose of a sanctuary containing the altar. The typical basilica was a rectangular building, divided by two rows of columns into nave and aisles, the central portion rising higher than the aisles and forming a clerestory pierced with windows; the apse was semi-circular and of the width of the central nave, and in some cases there was a transept, or cross nave, separating this apse from the main body of the building.

In the transformation of the pagan, secular basilica into the Christian church, two factors must particularly be taken into account. In the first place, the acceptance of the new religion by the Imperial Court caused great numbers to become nominal Christians for reasons of fashion or policy and without sufficient instruction or vital sympathy. Court favour meant the rapid development of ritual to a point of great magnificence, while the converts from policy tended to preserve as far as possible the outward forms of the old paganism. This influence was temporary, but it meant a period of conflict with all sorts of strange heresies, a contest from which the Catholic element emerged victorious, with a definiteness of dogma and a certainty of conviction that might otherwise have been wanting. In the second place two racial forces showed themselves, one that of the Latins, the other that of the Greeks. The removal of the Court to Constantinople had divided the Empire, and Rome decayed while the "New Rome" correspondingly flourished. In Italy the Pope became

the virtual centre of both ecclesiastical and secular authority but the Latin population, harassed by the invading barbarians, was decadent, yet in Byzantium, in Syria and in what is now known as Asia Minor, the dominant racial stock was Greek, and here there was wealth, power, culture and a measure of order.

The Roman was never great in architectural or any other art. The Greek was always great in all, and the really constructive work in the development of the first consistent Christian art was accomplished by these Greeks of the Eastern Empire. They were well fitted for this task for they were not only artistic by nature but they were supremely logical; this quality, which was purely intellectual, had been their undoing in the past, but it was now redeemed and balanced by Christianity which was the first and perfect fusion of intellect, the mark of the Western races, and emotion that of the East. The East-Roman Empire bordered on a long line of oriental peoples, absorbing many of them into itself, and it shortly became in effect a blending of Greeks and Orientals. In Rome itself this Eastern influence was operative, but here it showed itself chiefly in splendour of colour and ornament. The great basilicas of Constantine, as for example the original St. Peter's and St. John Lateran, the existing Sta. Maria Maggiore and the rebuilt St. Paul Without the Walls, showed practically no divergence from the established secular type; they were more vast, but their plan and general scheme were the same. In decoration they were sumptuous to a degree, with long ranks of columns of precious marble from dismantled pagan temples, wall coverings of alabaster and porphyry, and mosaics of the richest sort. In their solemn splendour they echoed the gorgeousness of early Christian ceremonial, for, contrary to common ideas, this was, at least from the fourth century, elaborate and superb to a degree we can find today only in the churches of the Eastern rite and, in vanishing form, in the Mozarabic liturgies of Spain. The standard ceremonial of the Roman Catholic Church

today, instead of being a late development, is really the result of an attempt in the West to devise a simple and modest liturgy to take the place of the intricacy and splendid elaboration of the primitive Church.

II. BYZANTIUM AND THE EAST

The great structural development took place in the East because it was there that Greek logic, inventiveness and artistic sense came into play. From Persia and Mesopotamia came the dome as a determining structural form, and for a time we find throughout the Eastern Empire, from Syria to Thessalonica, a contest between the Roman basilica and the centralized domical scheme, each striving for universal acceptance; in the one case the long, widely extended rectangular areas with their timber roofs, in the other the square, circular or polygonal space surmounted by a masonry dome, and frequently with smaller half-domes bubbling up around the circumference. It was apparently in Syria that this rivalry and development began, but it quickly extended through Anatolia and Armenia, finding its culmination, so far as extant examples are concerned, in Constantinople, and especially in the vast and incredible church of the "Holy Wisdom" or Hagia Sophia.

This majestic structure was, and still remains, one of the wonders of the world, but it was not unique; there were other churches in the capital city of rivalling splendour, and very many others in the great cities of Asia Minor, Syria and Egypt, one of which in particular, the great church of Antioch, was the marvel of men and has now utterly vanished away. All were examples of the most splendid decoration in precious marbles and mosaics, with altars, thrones and shrines of solid silver and gold set with precious jewels, but they were even more wonderful as models of organic design for in them the Greek architects had succeeded in creating a new style in which the dome controlled all things, with the

Roman arch and vault blended therewith in a perfect unity. In order to achieve this end many hard problems of structure and design had to be solved, as for example the fitting of a circular dome on a square plan, but success followed in every case and the result was one of the most original and highly articulated schemes of building ever devised by man, as well as one of the most beautiful. It was the first coherent and adequate expression, in artistic form, of the religion of Christianity.

From its Syrian source the strong influence spread south to Alexandria, that gorgeous and profligate city, north to the Imperial capital on the Bosporus, and west to Italy itself. Of the Alexandrian work no stone remains, but here the novel Christian art came in contact with the most sumptuous type of Imperial splendour and the fusion resulted in a distinct type of decoration, traces of which may be seen in the Baptistry at Ravenna where also we find still preserved examples of both church types, the basilican and the domical, San Vitale being a fully developed form of the latter as this had been worked out in Syria. The Roman work of this nature is gone, nor was there ever much, but in Venice something is still preserved, for this city was always an outpost of the East and St. Mark's still stands a living embodiment of the union, itself either a close copy of a destroyed church in Constantinople, or of another, also destroyed, in Alexandria. Venice was always a centre of light, even in the Dark Ages, and its influence was operative throughout Mediaevalism, even helping, in curious ways, the development of Gothic itself.

It was not alone in its contributions to the perfecting, perhaps even the inception, of Byzantine art, that Syria played a great part; the curious round-arched motives of the southern, and particularly of the central, schools formed the basis of much of the Romanesque of the south of France as this was developed in the eleventh and twelfth centuries when the traders, and later the Crusaders, came back across the Mediterranean with their memories of the great art of the

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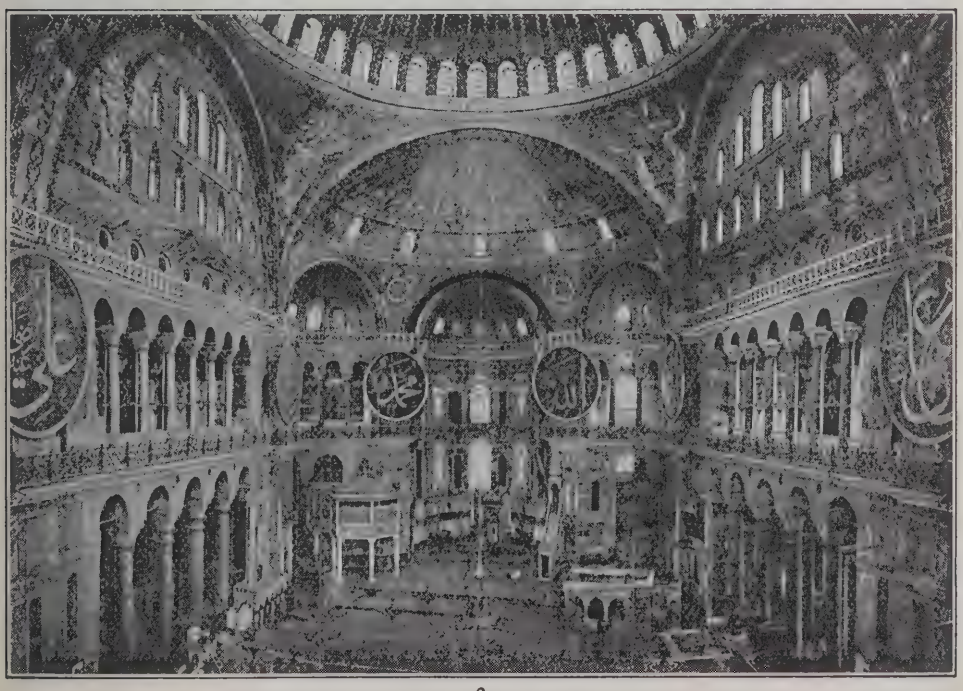

2

1. INTERIOR, SAN PAOLO FUORI LE MURE, ROME
2. INTERIOR, HAGIA SOPHIA, CONSTANTINOPLE

1

2

3

1. INTERIOR, SAN MINIATO, FLORENCE
2. A LOMBARD PORCH
3. INTERIOR, SANT' AMBROGIO, MILAN

PLATE 23

Holy Land. The original motives of the apses of this style are to be found in almost identical form in the sixth-century churches of Syria, while the great triple doorway or porches which began with Saint-Gilles and, through the transept porches of Chartres, grew into the cavernous doorways of the typical French cathedral, may be found in their original form in the ruined church of St. Simon Stylites in central Syria.

Greek and Oriental, intellect and emotion, form and colour, had come together in the land of Nazareth and Bethlehem and Jerusalem, and under the creative influence of Christian religion, Christian philosophy, and Christian life, brought into being the first Christian art, the power of which was to persist for a thousand years, however much the form might change under the impulse of varied racial types.

III. EUROPEAN BEGINNINGS

So far as western Europe is concerned, that is to say, all that had been the Empire of Augustus from the Atlantic to Macedonia, the fall of Rome in the sixth century, with the total disappearance of her power and authority, and the dominance of the barbarian elements in her polity, meant the end for a time of all civilization and of all advancement in art. Much of culture and of art was preserved in Byzantium, but for nearly three centuries Europe lay fallow after the great catastrophe. The whole civil system crumbled and disappeared under barbarian control and the Church was the only thing that approximated to a force of law and order, the popes combining, in some sense, the old Imperial functions with those of their ecclesiastical estate. Very swiftly the barbarian tribes were influenced towards civilization by the religion which now counted no rivals, and the feudal system came into being as the basis for a new political and civil organism. In this process of recovery the greatest force was that of the monks under the rule of St. Benedict, a great multitude of men scattered in highly organized groups

throughout all Europe west of the Rhine and south of the Danube. Their great work was the building up, not only for themselves but for the communities around them, of a life as nearly Christian as they could make it, and from the middle of the seventh century to the end of the thirteenth they formed, under varied systems of organization, the great constructive force in society.

In time this society achieved a new coherency and for about a century, in the very middle of the Dark Ages, there was a period of real civilization. It began with the beating back of the Mohammedan invasion by Charles Martel, an irruption through Africa and Spain that threatened for a time to crush Christianity altogether and turn Europe into a series of Mahometan caliphates, and was continued by the campaigns of Charles the Great against the even worse hordes from the east that were coming through Germany and Austria. Europe was saved, and Charles was acclaimed Emperor of the new Rome and crowned by the Pope in St. Peter's on Christmas Day in the year 800.

If there had been any building worthy of the name of architecture in Europe for two centuries, neither vestige nor record remains. The ruined temples and villas of Roman civilization had been dismembered and the fragments put together again after some rough fashion to serve the simple purposes of the monks, the feudal lords and the various peoples struggling out of barbarism, but so far as we know there was no art here of any kind. Under Charlemagne there came a sudden recovery, once the Moors and the Eastern savages were turned back, for he was a great king and he surrounded himself with all the men of ability he could gather from every part of Europe. He built much, but practically nothing remains except the royal chapel at Aix-la-Chapelle and the fragments of a small church at Steinbach. St. Jean, Poitiers, is probably of the same date and the gateway at Lorsch and Germigny-des-Prés a little later. The Chapel at Aix is the most important but it is little more than a rude copy of San Vitale. Some

say the master builder was imported from Byzantium, others that Einhard was the architect, and there is a tradition that all the Carolingian work was carried out by the "Comacini" who are held to have been the descendants of members of the old Roman building guilds who fled to an island in Lake Como at the fall of Rome. In any case there was no originality and little craft; old materials were generally used over again and put together after a rough-and-ready fashion. Better work may have perished than has been preserved to us, but this is hardly probable.

Something might have come of it all if the Carolingian standard of civilization had been maintained, but it was all no more than a "false dawn." After the death of Charlemagne's son, Louis the Pious, everything went to pieces again with the partition of the Empire, and the Dark Ages returned, only with an intensification of their gloom. Not only did social chaos supervene, but the Church fell again into bad hands, and for nearly two hundred years Europe was again sunk in barbarism. During this whole period of five centuries from the fall of Rome important things were happening however, for all the time the Northern races that had been filtering in through the dissolving Roman frontiers were being Christianized and in a measure civilized, chiefly through the influence of the Benedictine monks and the institutions that grew out of feudalism. By the end of the tenth century this process had apparently been completed, at least sufficiently to enable a beginning to be made, and with the opening of the new millenium the curtain rose, so to speak, on the great drama of Mediaevalism.

The prologue to this vast Christian epic covers the last three-quarters of the tenth century, and its events synchronize with the greatest degradation. In 927 a new life came into monasticism through the reformed order of Cluny; in 936 Otto the Great became Emperor; in 987 the new Capetian dynasty was established in France, and in 999 Pope Sylvester II began the redemption of the Church. Mean-

while the Hungarians and Slavs had been beaten back from the eastern frontiers of Europe, while the Northmen under Rollo had established themselves in Normandy. This last event, beginning as a catastrophe, was destined to prove a blessing, for the monks of Cluny promptly converted these fierce barbarians from the Baltic, and in less than a century they had become the greatest power for good in all Europe. As they were the dominating force in civilization during the eleventh century, so the Franks, in their turn under the influence of the Cistercians who had followed the Cluniacs as the centre of spiritual energy, took charge of the twelfth century, and between them they built up Mediaevalism. Into the almost universal corruption sprang great leaders and captains of men, raised up apparently without warning, and not only in France, Normandy and Burgundy, but in Spain, Poland, Italy, Sweden, the Rhineland, and conspicuously in England. The vitality was prodigious, the revolution and reform comprehensive. "Never was such an upheaval, such a rattling of the dry bones of wide decrepitude by militant monks, mad with the zeal of reform, and by Norman, Frankish and Flemish adventurers whose headlong careers were embellished by an equally headstrong religious ardour." In the end Europe proved too small for the exuberant vitality of a North that suddenly had found itself, and the riot of action culminated, just as the century closed, in the First Crusade.

"Of course art answered to the existing stimulus, as it always does when the driving impulse is based on fundamental things. Music, from about 1030, developed on new and brilliant lines; at the very beginning of the century, nuns in their Rhenish cloisters were writing Latin comedies; in Hildesheim and Liège the arts of metal achieved a sudden and amazing splendour; sculpture began its recovery in the south of France, while architecture opened like an expanding flower, not only in Normandy, but in France, Burgundy, the Rhineland, and in every quarter of Italy from Lombardy to Calabria and Sicily."

The architectural beginning is in Italy, and just as soon as the year 1000 is passed it shows itself in two places, Tuscany and Lombardy. The first of these two schools is curious and hardly to be explained; the chief existing works are San Miniato and the Baptistry in Florence, together with Pisa Cathedral to a certain extent. They are perhaps the work of a Greek architect imported from Syria, and probably of Syrian craftsmen as well, for the work is exquisite in its fineness. There is nothing Lombard about the Florentine work, though Pisa shows this to a certain degree. If the South had taken charge of the development of civilization the whole history of Christian art would have been different and San Miniatomight have been its prototype. This was not to be; the North gained the control and Gothic was the result.

All the same, Byzantium and Syria played their part, the first through the Court of the Empire where the Princess Theophano, daughter of the Eastern Emperor, became the wife of Otto II and mother of Otto III. When she came to (what must have been to her) the barbarian West she brought enormous treasure of works of art and craftsmanship of all kinds, and artists and artisans as well, and this influence went far. As for Syria it worked most powerfully in the south of France which was the gateway to Europe for all the merchants of the East. In a way the Romanesque of Provence and Languedoc is a continuation and amplification of the sixth-century architecture of Syria. I shall return to this later.

The school of Lombardy is vital and significant; it is also in the direct line of succession, for from thence came the first models, and perhaps the first workmen, that were to form the foundation for the great style of Normandy which, in its turn, was to become the basis for the Gothic style. The Lombards were a most interesting people; originating in Scandinavia they crossed the Baltic at some time and settled in the valley of the Elbe whence, later, some portion of the tribe migrated south to the Danube. By the year 586 they

had in some way become Christianized after the Arian mode, and it was then that they descended on Italy through the passes at the head of the Adriatic. By this time the brief dominion of the Goths had been abolished and the Lombards succeeded to their power in the ravaged and desolate country of the north, but they were always barbarians in spite of their almost violent devotion, and to the Latin element at Rome under the Pope, and the Greek at Ravenna, they were an alien band of tyrants and invaders. During the two centuries of their rule they intermarried much with the Italian population and their Teutonic language was lost, as well as much of their primitive social and political organization. The Greeks at Ravenna were too decadent to move against them, and at last the Pope appealed to Pippin to whom he had given the Frank crown in succession to the degenerate Merovings and he struck the first blow, which, followed by those of Charlemagne, brought the Lombard dominion to an end in the year 774.

Now the Lombard cities — Pavia, Milan, Monza, etc. — had achieved considerable independence under their dukes, and this liberty was greatly increased under the bishops who took their place when the Frankish kingdom was established. In due course they won their independence of the bishops and became free communes, walled towns of order and industry in a wilderness of turbulence and disorder. It was here that the new style of building showed itself in the ninth century. It was not much at first, just crude assembling of old material, as at Agliate, but from the very beginnings of the eleventh century a new quality shows itself, as in Sant' Eustorgio in Milan. There is some spirit of the North working, shaking the dry bones of a long dead pagan art, and in hardly more than fifty years we see the development of the earliest stages of some of the fundamental structural principles which, transferred to Normandy and France, were to be transmuted into Gothic. The round or square piers of Roman architecture became compound, *i.e.*, made up of an

increasing number of parts square and semicircular in section: the "alternating system," which means in the nave structure a system of square areas supported on rectangular piers, each subdivided by an intermediate column, was worked out; the concentration of loads on piers and shafts was begun, together with local buttresses to take the concentrated arch thrusts, and finally it now seems probable that the pointed and domical vault was achieved after a rough fashion, and even, though this is not quite sure, the ribbed vault was devised.

IV. THE STRUCTURAL DEVELOPMENT

Gothic, or the Christian architecture of northern Europe, north of the Alps and west of the Rhine, is both a system of construction and a new vision of beauty: that is, it is both body and spirit. It is necessary to guard against the dangerous teaching of those who would make either alone sufficient, without regard to the other. The structural scheme is the most complex and highly developed of all schools of building, but the spiritual quality is of equal moment. The first was worked out to perfection in France while it is very defective in England, but the second is sometimes more poignant in English work, and Spanish, than it is in French. All are equally "Gothic," for the *spirit* is the same.

There is no more fascinating study than the development of the Gothic structural scheme for this is truly one of the greatest triumphs of man. Charles H. Moore is an excellent guide in this field, Henry Adams, W. Worringer, John Ruskin and Émile Mâle in the domain of the spiritual content of a great art. To indicate the beginnings of this structural development I quote from my "Substance of Gothic."

"This development of the original basilican plan and organism until it finally culminated at the hands of other races and far in the north, was somewhat as follows:

"The supply of ancient marble columns being exhausted,

circular or square piers built up of small stones were substituted. At about the same time arches were thrown across the aisles from each pier to the outer wall, possibly for aesthetic reasons, more probably for purposes of stability. In any case they involved the addition of a pilaster to the pier to take the arch on its inner side, and so the first step toward the compound pier was accomplished. Next, great and high arches were flung across the nave, partly for stability, partly because of their beauty. These arches were either on every third pier, as at San Miniato, or on every alternate pier. In either case an additional pilaster was built on the pier that bore the nave arch, so making it cruciform, while the intermediate support, having less work to do, was made smaller. Thus the alternating system of the late Norman and early Gothic was begun, while the scaffolding had been prepared for the next innovation, which was masonry vaulting. This began first in the small areas of the side aisles, and was plainly groined, without ribs. Almost immediately the structural convenience of ribs was either rediscovered or remembered from the Baths of Diocletian, or copied from Syria, and after this the whole scheme of Gothic construction was inevitable. The ribs made elaborate centering no longer necessary, since they were built first and then the spaces simply filled with thin stones from the haunch upward. This simplification made the high vault possible, and this at first was quadripartite, or just the space of two of the aisle arches. Which was the first ribbed and pointed nave vault is a question that is archaeological rather than architectural. That it was not earlier than 1025 or later than 1075 we are reasonably sure. The vault of Sant' Ambrogio is of the year 1060 and so perfect it is surely not the first. Venturi, Stiehl, Lethaby believe this ribbed, pointed and domed vault to be a Norman invention, and others claim that Durham in England is the first. It does not really matter, the feat had been accomplished, and that is really all we need to know.

"Already we have a definite concentration of loads on cer-

tain points, and aesthetic recognition of this new principle. This involved a new scheme of buttressing, for while the thick Roman walls of the aisles had served to take the thrust of the transverse aisle arches, the nave arches, particularly when stone vaults were added, were a different matter. Naturally the first step was to build transverse walls across the aisles, piercing these with arched openings, as at Sant' Ambrogio. This is as far as the Lombards went; the flying buttress was the final structural refinement of the Normans and the Franks."

Simultaneously a new thing was showing itself in the ornament of these buildings. Roman decoration had ended as it began in a mass of lifeless, standardized forms; Byzantine decoration, under Greek and Oriental influence, had become a thing of singular vivacity and sumptuous beauty, but this also was hardening into formalism. The Lombards took over what they could get of the latter, through Venice and Ravenna, but they put into it a new force inherited from their ancestors of the wild North. The awe of the dark forests and fierce seas was still on them, and strange apocryphal beasts, fantastic herbage, impossible flowers, all knotted and convoluted in runic designs, became the substance of their decorative sculpture. There is something of terror and much of grotesque in their work, but above all a brilliant decorative sense and a quality of wild freedom that, curbed at last by sound law, became the noble liberty of Gothic art.

V. NORMAN ARCHITECTURE

The beginnings are elsewhere than in north Italy, and we must cross France to the shores of the English Channel to take up this story. Here in Normandy the fierce Vikings had found a home and, at the hands of the monks of Cluny, a religion. They were ready to go on and give this its architectural and other artistic form, but they had nothing to work on until the material was brought them from the South.

This came, and the agent was a certain William of Volpiano who was born in the year 961 on a little island in Lake Orta in Italy, very likely himself of Lombard blood, as his Christian name would indicate. He became a monk of Cluny and when very young was sent north to become abbot at Dijon where he built the great monastic church of Saint-Bénigne. A little later, so great was his fame as a leader and reformer, Duke Richard II of Normandy called him to Fécamp as abbot of the great monastery in that place.

William was the greatest builder of the new age, but thanks to the French Revolution most of his work has either been destroyed or hopelessly ruined. The great abbey at Dijon has utterly disappeared. Bernay is wrecked and desecrated and the same is true of Jumièges. He had many disciples who built the original church at Mont-Saint-Michel, also Cerisy-La-Foret and Saint-Georges-de-Boscherville. Finally Lanfranc, also born in Pavia and of Lombard blood, became a monk of Bec (another of the three greatest Norman abbeys) only nine years after the death of Abbot William, and at his hands the new style initiated by Abbot William reached its culmination. Again I will quote from "The Substance of Gothic."

"The loss of Saint-Bénigne is irreparable; it marked the first advent in the north of the Lombard principles; it formed the point of contact between Italy and France, and, judging from its foundations, which are all the revolutionists have left us, and from the most defective drawings, it was an unique stage in the development of the Gothic chevet. It was a T-cross basilica, with apse and flanking absidioles; a great circular church or rotunda adjoined it to the east, and by two rings of columns was divided into a central well with two vaulted galleries, while again to the east was a quadrangular chapel forming the tomb of the saint. The importance of this building cannot be overestimated, for in the year 1002, it amazingly foreshadows the fully developed cathedral of the thirteenth century. Undoubtedly its resemblance to

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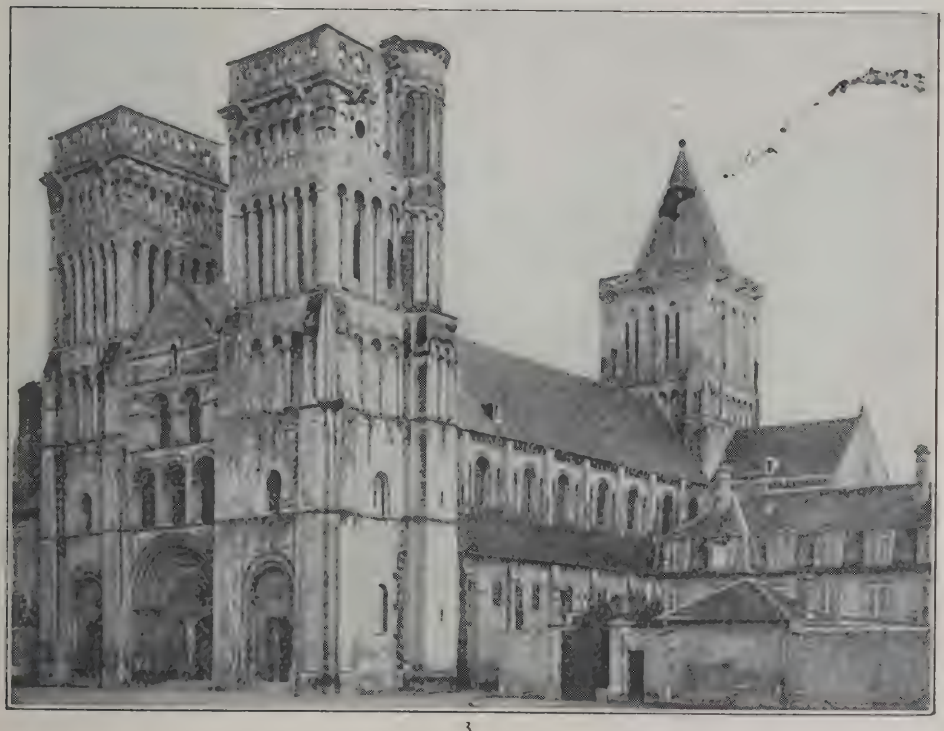
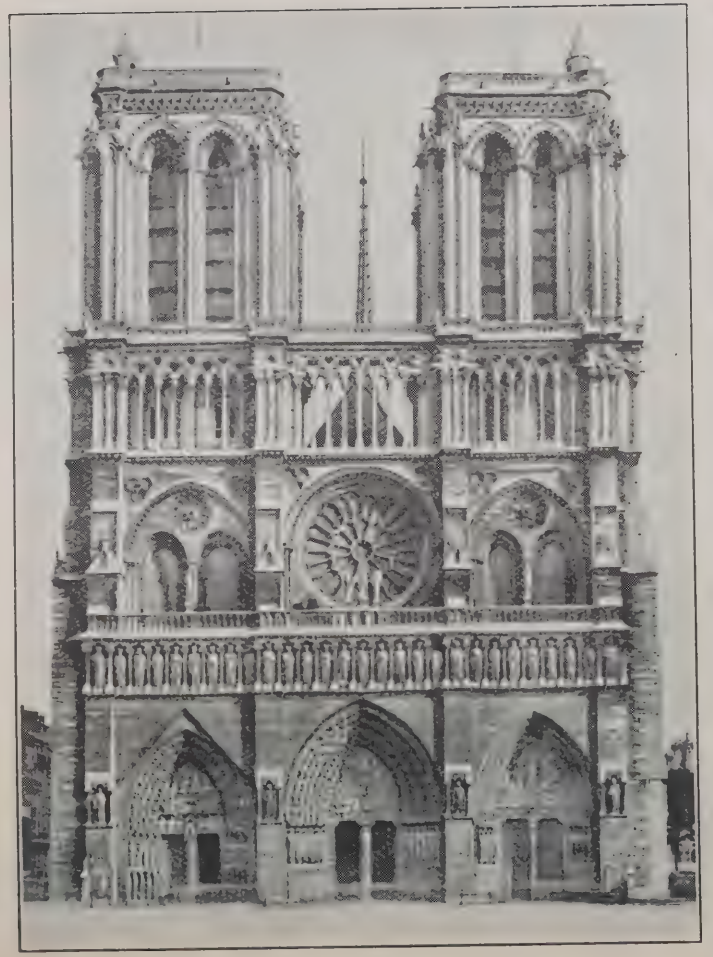


3

1. INTERIOR, ABBAYE AUX HOMMES, CAEN
2. NAVE, JUMIÈGES
3. EXTERIOR, ABBAYE DES DAMES, CAEN



WEST FRONT, CATHEDRAL OF PARIS

INTERIOR, CATHEDRAL OF BOURGES

the Church of the Holy Sepulchre in Jerusalem links it also with the school of Syria.

"Bernay, constructed in 1013, is the true beginning of the Norman style, lofty, massive, masculine; a Latin cross with deep chancel (instead of the Italian T-cross), with compound piers and archivolts, ambulatories in the thickness of the walls, and the full order of arcade, triforium, and clerestory, though the triforium arches were later blocked up. Mont-Saint-Michel is next in order, and proceeds in richness and articulation beyond Bernay, from which it was copied, while here for the first time the walls are reduced in thickness and buttresses are substituted — a vital change, the significance of which is inestimable.

"Cérisy-la-Forêt and Jumièges supplement each other, for in the former the west front and towers, with five bays of the nave, have been destroyed, while in the latter the original apse was supplanted by an elaborate chevet in the fourteenth century, and this wholly disappeared at the Revolution, leaving hardly more than the nave and west front structurally intact. These two churches are momentous in the history of architectural development. Cérisy is articulated beyond everything achieved before; it is a Latin cross with a polygonal apse, wide transepts, and aisled nave and choir. It looks to be of the same date as Saint-Georges-de-Boscherville, and therefore later than Jumièges, but this does not help us much, since it is not sure whether the former church is of 1050 or 1110. It certainly is more delicate in design than Jumièges, but on the other hand the aisles and triforia of Jumièges are vaulted, which is a sign of increasing confidence and ability on the part of its creators. Rivoira is explicit in his statement that it was consecrated in 1032 and that Durandus was the architect; on the other hand Rupricht Robert dates it 1150, and Porter comes between with a guess at 1130. From the evidence of the building itself I should incline to the very end of the eleventh century. In any case it is a very noble work of art with many elements of tran-

scending importance, *e.g.*, the alternating system with transverse nave arches at every other pier, the apse with three stories of windows, and wall passages at the two upper levels, and the finely developed square central tower. If it is earlier than Jumièges, it is the first church in the north to adopt the Lombard transverse arches across the nave, — the first step toward the Gothic high vault and the sexpartite form; if later, then the same is true of Jumièges, which was certainly built in 1040. In both cases all the previous steps toward the development of the Gothic system have been brought together, while the proportions have become lofty and noble, the parts admirably related, and the whole infused with a certain poetical quality hitherto unknown. I am persuaded that Jumièges originally had alternating transverse nave arches, like Cérisy, though I believe no one has suggested this before. Its western towers are of extraordinary beauty of composition and outline, but the end of the nave between is crude and undeveloped and is, I imagine, something left over from a much earlier church."

Under Lanfranc of Bec everything was made of this new Norman mode of building that could be made, and the results were seen first in Caen and later in England where, as Archbishop of Canterbury, Lanfranc followed his Duke whom he had been largely instrumental in making King of England. He built inordinately: first an entirely new monastery at Bec (now destroyed) and then the abbey of La Trinité, since wholly rebuilt, the Abbaye aux Hommes and Saint Nicolas, Caen, and finally Canterbury Cathedral, while simultaneously came, though probably at different hands, St. Albans, Lincoln, Winchester, Ely, Durham, Tewksbury and Gloucester.

VI. DEVELOPMENT OF GOTHIC ORGANISM

It is hard not to be technical in dealing with the structural development of Christian architecture, for so much depends

on certain pregnant devices, as for example, the ribbed, pointed and domed vault, the concentration of loads, and the abutments that took the pressure of these concentrated arch- and vault-thrusts. Gothic architecture is organic and it is therefore perfectly articulated. Greek and Roman architecture was static, either the post-and-beam system, or vaults and arches resisted by sheer bulk, and domes which were more like solid concrete lids. Gothic leaped with life at every point and a live load or thrust was met by a live and active resistance. Much of all this was done in a preliminary sort of way in Lanfranc's abbey of Caen, and thus:

"The ribbed and pointed vault had already been worked out, and so had the two forms of sexpartite vaulting, in the abbeys of Caen. The next step was the adoption of the oblong vault area. In the Abbaye des Dames the vault, though comparatively late, is undeniably a survival of the earliest form of high vault, for it is simply a great intersecting vault of equal sides, the transverse crown being reinforced and supported by an arch with its spandrels filled in by a thin wall of stone — manifestly an evidence of doubt on the part of the builders as to the stability of so large a quadripartite vault as is necessary to span a nave always twice the width of the aisle. Incidentally it is also a first step to the oblong area. The vault of the Abbaye aux Hommes is a clumsy approach to the true sexpartite vault, for here the masonry springs back on either side from the intermediate wall to meet the main curves of the square vault, so forming exterior wall surfaces into which an arched window accommodates itself without offense. Of course, as soon as the oblong areas which naturally followed from the perfected sexpartite form were generally adopted, the alternating system was given up, and the regular order of Gothic columniation determined for all time. Simultaneously the device of stilting was introduced, whereby sharply pointed arches were avoided and the full thrust of the vault brought to bear along a single vertical line above the vault shafts — a thing as beautiful as it was

mechanically perfect, for it resulted in that warping of the vault surfaces which is one of the most subtle charms of French Gothic architecture.

"The problem of receiving these concentrated thrusts had been partially solved in Normandy: the old Roman device of huge masses of masonry, or rather transverse walls, adopted at Sant' Ambrogio, had been abandoned, and in his Abbaye aux Hommes Lanfranc had substituted the half of a barrel vault running the length of the aisle and abutting against the nave wall. This was effective but illogical, for only a small part of the buttressing arch received any thrust whatever. Almost immediately therefore, as in the Abbaye des Dames, the intervening areas were cut away and only the arch at each pier remained. This of course was a true flying buttress, but it was still concealed below the aisle roof, hence the clerestory was restricted in height to the wall area of the vault alone. At Noyon, about the middle of the century, and apparently for the first time, the abutting arch emerged into the open air and the flying buttress with all its possibilities had come into its own.

"We have now, you will perceive, nearly all the elements of the Gothic organism: The cruciform plan with wide transepts and deep choir, the vertical order of arcade, triforium and clerestory, pointed arches, ribbed and stilted vaults with oblong compartments, concentrated loads and thrusts, direct abutments, with the flying buttress *in posse*, and the intervening walls reduced by half in thickness; articulation expressed by compound piers and arches, with vault shafts well grounded from vault to floor, lofty proportions, complex compositions of light and shade. All this has worked itself out in the interior of the church; outwardly little change is apparent, for Gothic growth was exclusively from within outward, as it was essentially a logical and an organic growth. We have, it is true, even at Jumièges, the great west towers, with the other over the crossing always favoured in Normandy and therefore in England even to the end of the

Middle Ages, but apart from such large and general forms the exterior, even of almost fully developed Gothic structures, still remains, to all intents and purposes, that of a Norman Church."[1]

There is one more great element to be considered, and it is both structural and aesthetic; I mean the "chevet" or polygonal eastern end of the Gothic church, with its surrounding aisle and radiating chapels, its triple vertical order of arcade, triforium and clerestory, and its flying buttresses. It is a dazzling device, a thing of wonder and beauty. What does it come from? What were its origins? I believe it is the final union of the Greco-Oriental polygonal church with the Roman basilica, and is no more nor less than one half such a "centralized" church as Bosrah in Syria, San Vitale, Ravenna, Aix-la-Chapelle or Saint-Bénigne, Dijon, backed up, so to speak, against the east end of a church of basilica form, in place of its original semi-circular apse, and then co-ordinated with the whole structure and articulated by the devices of concentrated loads, pointed, domed and stilted vaulting and flying buttresses. An argument in favour of this theory is the abbey church of Essen dated 1040, where the east end is simply and frankly three sides of the chapel at Aix applied to the end of a Romanesque basilican church.

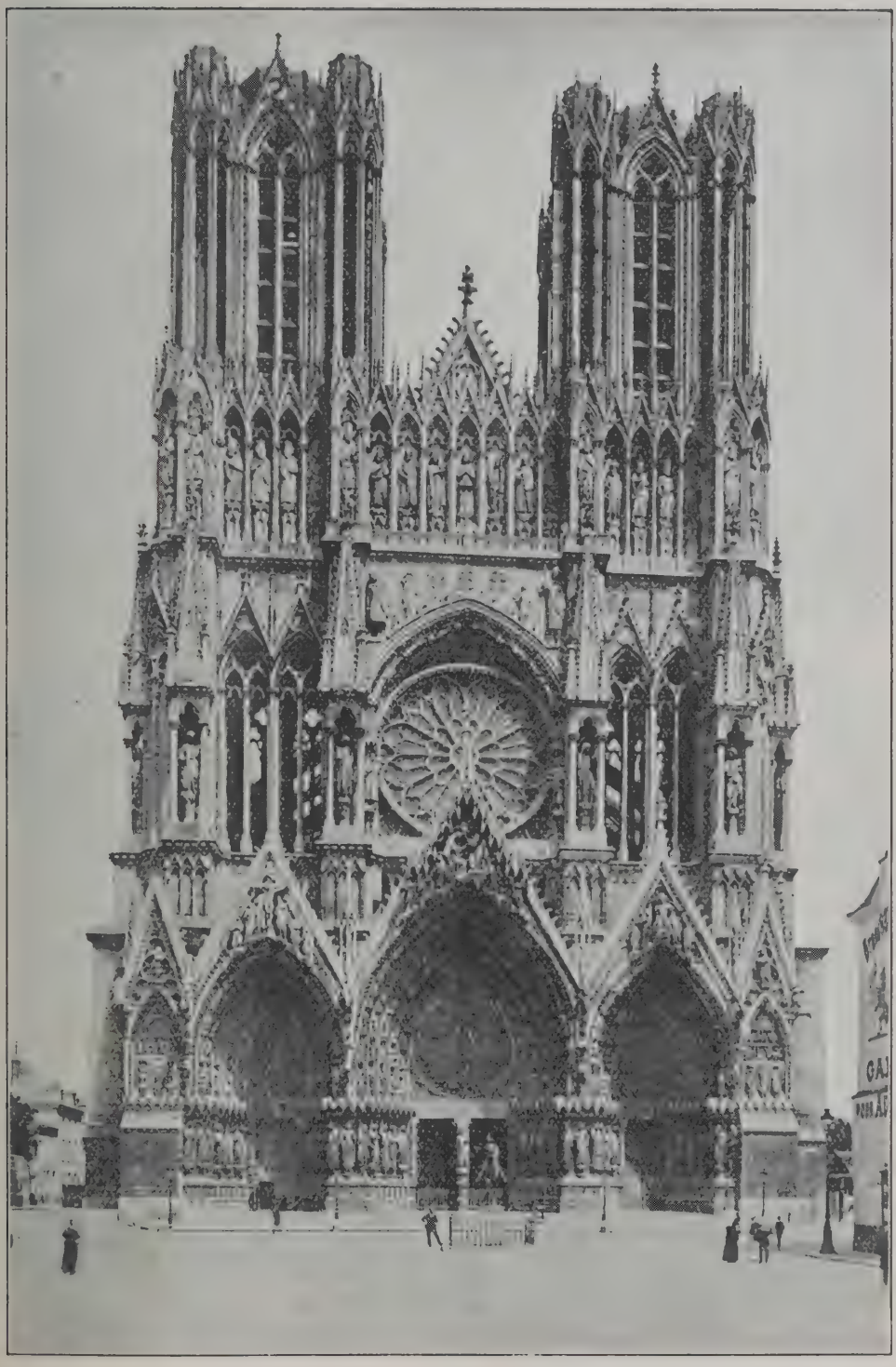
Beyond the Norman work of Lanfranc we can go a little further in the churches of Bury and Saint-Germer-de-Fly, where Gothicism is approached a step nearer, but thereafter the tale changes, and suddenly everything is handed over to the French who in fifty years transform a progressive Norman into a definitive Gothic. The monks of Cluny had done their work of spiritual, social and ecclesiastical reform and now began to decline through wealth and worldliness: the Normans had played their part and could give place to another racial strain. The Cistercian reform followed and this worked on the French and the Burgundians. The nave

[1] Cram, R. A., *Substance of Gothic*, Boston.

of Bury was begun in 1125, Saint-Germer-de-Fly in 1130, and in 1140 Abbot Suger consecrated his new abbey church of Saint-Denis. The first two, with all their proto-Gothic elements, are still only a kind of highly articulated Norman; Saint-Denis was (only the chevet and the west front remain of the original building) fully developed Gothic. No sooner was it finished than Sens, Noyon, Paris and Laon followed at once and Gothic was an established fact; thereafter Bourges, Amiens and Reims are inevitable.

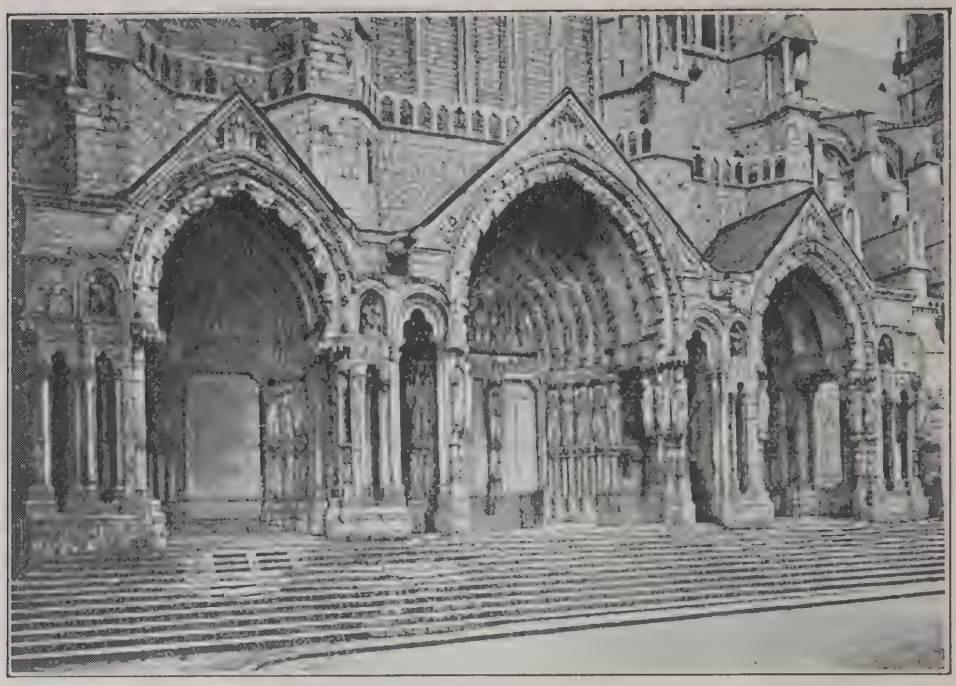
VII. GOTHIC CHARACTER

"We have seen how nearly all the structural elements of Gothic already had been brought into being; what remained was the Gothicizing of it all, the giving it essential Gothic quality. This may, I think, be divided under three heads, Cohesion, Economy, and Character. The first means knitting everything together synthetically, giving it a certain dynamic power to grow from within outward in accordance with clear laws and under one impulse, and finally making structure itself, not only efficient as such, but beautiful in itself, the central fact and force in the style, all ornament of every kind being something added, but growing inevitably from it. Economy means the discovery of physical forces, using them in such a way that they work either together or in intelligent and effective opposition, so making possible the reduction of columns, walls, arches, buttresses, vaults, to a logical minimum, but always with regard to that *optical* minimum which prevented a reduction in bulk below a certain point, even if a further diminution would be structurally safe, since the mind must be satisfied, through the eye, and the physical test could not be considered as final. Character is the hardest thing to define, but in a way the most significant. It is the quality that makes a thing Gothic whether its structural system is of the perfectly developed type or not. It is what the glass of Chartres, the sculpture of Amiens, the



WEST FRONT, CATHEDRAL OF REIMS

PLATE 26



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1. NORTH PORCH, CATHEDRAL OF CHARTRES
2. WEST PORCH, S. GILLES

PLATE 27

pictures of Giotto, the "Hora Novissima," the "High History of the Holy Grail," all possess in common with the great cathedrals, and in so full a degree that they may all be called Gothic, or Mediaeval, or if you like Catholic. Singly and together they are the creation and the expression of the epoch when Catholicism interpenetrated all life to such an extent that no single portion of society, except the Jews, the Mohammedans, and the as yet unconverted tribes of Prussia, were outside its scope or beyond its influence and control. Character means for us difference in quality, and this is both material and spiritual. Saint-Georges-de-Boscherville has, for example, almost as many Gothic elements in its construction as the Cathedral of Sens, but the one is essentially Norman in character, the other just as essentially Gothic. The character of the mouldings in Cérisy is of one type, that of Noyon absolutely different, and the same is true of the scheme, the material and the detail of design. The ornament of the later Norman and Romanesque is rich and elaborate beyond Gothic comparison, until the fifteenth century, but it differs as completely from that of Chartres or Amiens or Lincoln as it does, on the other hand, from that of Greece. The placing of ornament, also, is wholly different, and a new theory of composition grows out of a new energy." [1]

This "character" which sets Gothic apart from all styles as the same thing marks Greek or Japanese architecture in its own way, is the thing of real value in this Christian art of north-west Europe. It was determined by the character of the peoples and the civilization of the time. It grew naturally and without the aid of professional architects, princely patrons, schools of art or professors. Byzantine art was under Imperial protection, Norman was the work of monks, and particularly of their abbots, but Gothic, after Suger, was the affair of all the people, and they made it what it was. Let us try to put by themselves the various factors that were at work — not an easy task, for the Middle Ages

[1] Cram, R. A., *Substance of Gothic*, Boston.

were so closely knit together that it is hard to fix lines between religion, economics, politics, sociology, philosophy, amusement, fighting or any other of the active interests of mankind. That is one reason why they were so admirable and great.

Of course religion comes first as it always does where great art is concerned. At this time there was but one religion, universally accepted and singularly beautiful in its doctrines, practices and sympathies. It was also curiously personal and omnipresent in the interests of men, women and children. Its principle of sacramentalism glorified every material thing and humanized every spiritual thing, and it demanded every art that already existed or could be invented, for its own self-expression. The second factor was the social system of the time. Feudalism had sloughed off most of its bad qualities and had become a fine scheme of corresponding rights, duties and privileges conceived in terms of human scale. There was in the twelfth and thirteenth centuries hardly a city in France or England with more than 20,000 population, and each was a closely knit community with immense civic pride, public spirit and real liberty and independence. They built more churches and greater churches than they needed, just for the sheer joy of building, in doing things beautifully, and in glorifying God, the saints and their own city. Finally there was the peculiar industrial organization. The division of capital and labour was unknown and all industry, whether mechanical, artistic or commercial, was organized under a system of guilds. These guilds were free, devout and scrupulous. They were made up of apprentices, journeymen and masters and no one could attain a higher grade except by passing through a lower and proving his ability. The first aim was to establish and maintain the highest possible standard of workmanship and personal conduct, the second to guard the interests of members in life and death, and the third was to act as a body in looking out for the welfare of the community. Of course they were all

tied up in the closest way with religious duties and observances, and with every legitimate type of amusement and merrymaking.

It was a new scheme of life altogether; nothing remotely approaching it had ever been seen before, and the nett result was liberty, self-respect and joy in work. It is probable that there was more real freedom in the years between 1050 and 1300 than ever before or since, and this liberty shows itself brilliantly in the architecture of the time. Of course it was liberty subject to law, for without this there is no liberty, but the controlling force was then *law* not laws, that is, custom and divine revelation, not the innumerable statutes of irresponsible parliaments. The supremacy of law is felt in all Gothic art, but while this is one, like the vivifying religion, in all the work whether French, Flemish, Spanish or English, the modes of expression are infinitely varied as between one people and another, while in the case of any single building a hundred personalities show themselves in the varied statues, capitals, window traceries, doorways and chapels. Indeed it is seldom that a great church is built with the consistency of design that shows itself in Reims or Laon or Salisbury. One master builder had scant regard for the work of his predecessor; when his time came he built after the popular mode of the day, and most of the great cathedrals are piled up of half-a-dozen different styles — and with perfect unity of result.

VIII. THE BUILDING OF THE CHURCHES

With a religion and a city and a scheme of life in which every one believed and with which he was content, wonderful things happened of course — as wonderful as Chartres. Here is a contemporary account of the building of this same cathedral.

"Who has ever seen! — Who has ever heard tell, in times past, that powerful princes of the world, that men brought

up in honour and in wealth, that nobles, men and women, have bent their proud and haughty necks to the harness of carts, and that, like beasts of burden, they have dragged to the abode of Christ these waggons, loaded with wines, grains, oil, stone, wood, and all that is necessary for the wants of life, or for the construction of the church? But while they draw these burdens, there is one thing admirable to observe; it is that often when a thousand persons and more are attached to the chariots, — so great is the difficulty, — yet they march in such silence that not a murmur is heard, and truly if one did not see the thing with one's eyes, one might believe that among such a multitude there was hardly a person present. When they halt on the road, nothing is heard but the confession of sins, and pure and suppliant prayer to God to obtain pardon. At the voice of the priests who exhort their hearts to peace, they forget all hatred, discord is thrown far aside, debts are remitted, the unity of hearts is established. But if any one is so far advanced in evil as to be unwilling to pardon an offender, or if he rejects the counsel of the priest who has piously advised him, his offering is instantly thrown from the waggon as impure, and he himself ignominiously and shamefully excluded from the society of the holy. There one sees the priests who preside over each chariot exhort every one to penitence, to confession of faults, to the resolution of better life! There one sees old people, young people, little children, calling on the Lord with a suppliant voice, and uttering to Him, from the depth of the heart, sobs and sighs with words of glory and praise! After the people, warned by the sound of trumpets and the sight of banners, have resumed their road, the march is made with such ease that no obstacle can retard it. . . . When they have reached the church they arrange the waggons about it like a spiritual camp, and during the whole night they celebrate the watch by hymns and canticles. On each waggon they light tapers and lamps; they place there the infirm and sick, and bring them the precious relics of the Saints for their re-

SOUTH PORCH, CATHEDRAL OF BEAUVAIS

EXTERIOR, SAINTE-CHAPELLE, PARIS

INTERIOR, NOTRE DAME DU PORT
CLERMONT FERRAND

APSE, PUY DE DÔME
ISSOIRE

lief. Afterwards the priests and clerics close the ceremony by processions which the people follow with devout heart, imploring the clemency of the Lord and of His Blessed Mother for the recovery of the sick." [1]

From the building of Saint-Denis in 1140 to the building of Beauvais in 1500 is three centuries and a half, and this covers the period of Gothic architecture. Choosing a few significant monuments we find Notre-Dame-de-Paris begun in 1163 and continued year by year until it was completed in 1235. Noyon, Laon, Senlis, Bourges and Chartres were practically contemporary, at least in their beginnings, and are twelfth century or of the earliest thirteenth, while Coutances, Soissons, Amiens and Reims are of the very fulness of the thirteenth century. In the fourteenth century we get Saint-Ouen, Rouen, and Albi, with Louviers, Alençon and Beauvais as of the last phase, together with countless chapels, towers and other embellishments. It would be impossible to analyze or even describe each one. Every monument has its peculiar beauty, as the magisterial west front of Paris, the perfect interior order of Soissons (destroyed in 1918), the soaring wonder of Bourges, the calm finality of Chartres, the chevet of Le Mans, the towers of Laon, the unearthly, unapproachable symmetry of Reims — also largely destroyed in 1914. Universal liberty is working endless variants, universal law is holding all things firm and secure.

Let us try and visualize a Gothic cathedral as it stood in the early fifteenth century; any one and any where — France, Flanders, Spain, the Rhineland, Bohemia, Austria, England, only in the last case there would be sharp local differences. It rises very high in the centre of a small city of low houses that crowd it close. It is the religious, civic, social centre of everything. It is at once church, picture gallery, library, school, even in a sense, theatre. Approaching it from the west it lifts an enormous front divided into three both horizontally and vertically. The latter division is

[1] Translation of Henry Adams.

roughly equal; two matched towers with between them the end of the nave. In each is a vast doorway or porch, apparently hollowed out of the massive masonry, the three together forming a great triple shadow under the high, pointed arches. Above is usually a long range of niches right across the building, each containing a statue; sometimes this is, and is called, a "Gallery of the Kings." Above is the middle space, normally with a rose window in the centre, as wide as the nave, that is, from thirty to forty-five feet, and on either side tall windows in the towers. Sometimes there is a second great range of niches above, also with their statues, and then the belfries, slashed into tall windows and slim columns, and (always in intention but seldom in fact) with spires that shoot a hundred feet higher into the sky, all rich with pinnacles, buttresses and long-drawn-out dormer windows. The whole composition begins at the ground and simply grows upward with astonishing force and vivacity; it is massive yet delicate, proud yet friendly, austere yet full of pleasantry. Everywhere are statues, particularly in, around and above the great doorways; figures of saints, sovereigns, martyrs, warriors, virtues and vices, and often the "seven liberal arts," of Mediaeval schooling. Down where you can see them are the signs of the zodiac, the labours of man, and history both religious and secular. There is ornamental carving everywhere, and the models are usually the flowers or plants the sculptor saw in his garden or in the fields, mixed with familiar little animals and the humorous inventions of his own fancy.

Enter the church and at once you find yourself in a space which is unlike any other. Where classical architecture was *form* this is *space;* one of the great triumphs of this particular art. It is not so much that height, length and breadth are huge, as it is that there is a peculiar building-up and opening-out that give a curious sense of infinity yet at the same time of enclosure and protection. The walls of the central nave are divided into the great arcade, the triforium (a sort

of dark gallery very rich in design and taking the space between the aisle vaults and their roof) and the clerestory, which is the windowed area up under the high vault. As you look towards the east where the altar is, you see a marching procession of shafts and columns almost vanishing in the distance where they circle around the sanctuary and open up the tall end windows above the "processional path" that swings around choir and chancel. Looking sideways you see off through the arches lower aisles with their clustered columns, and still beyond them, it may be, rows of darker chapels. When all the stained glass is in place the combination of lights and shadows is masterly, for the high vault is almost lost in the dusk (at night wholly so) while the shadow deepens in the lateral aisles and chapels, broken only by the smouldering fires of the pictured glass. A Gothic church is a space of light in the midst of shadow; a symbol in itself.

Walk forward and the whole thing opens out in new combinations of form, colour and light-and-shade, until suddenly you stand at the crossing and the forest seems to fall away in a great openness where the transepts, or arms of the cross, stretch out to right and left, each with its enormous rose window and its chapels. There is still another variant as you follow the ambulatory that circles the choir, for here the vaults are low and the great sweep of the curve brings entirely new and varied effects, while each radiating chapel swings into view with its surprise of altars and pictured windows.

So much for the general architectural scheme, but to this must be added colour and gold, and a wealth of altars, shrines, tombs, statues, pictures, screens of wood and metal, altar ornaments of bronze and silver and gold, candles and hanging lamps, banners and tapestries and fittings of twenty different kinds. It is all *form*, clear, serene, perfect; *light and shadow* built up after a fashion that would be the despair of a "scenic artist," and *colour* that throbs with its own abounding life. And the nett result is a sense of adoration,

sacrifice and aspiration; all the arts raised to the highest point and marshalled after the most masterful fashion towards the highest ideal the mind and soul of man can compass.

All the other arts have followed architecture in its swift progress, some being transformed, others revived out of a long death, others newly created, but all given a new content and a new significance.

Mediaeval churches as we see them now (except in a measure in Spain) are shadows only of what they once were, for the glory of the other arts has departed. The Reformation, the Renaissance and the Revolution have in France swept the churches clear of all their wealth of art, except stained glass here and there (and all of it at Chartres), some exterior sculpture (again all of it at Chartres and Amiens, and at Reims until the last German invasion) and a very few chapels and shrines. A Gothic cathedral or church was never intended to be gray or white-washed, with windows of plain glass; it was conceived almost as much in terms of colour as of space and form. The windows were to blaze with the living glory of stained glass, the walls, columns, vaults were to be painted in vivid colours and gold, the statues also were to be painted and gilded both in the interior of the building and on its exterior, and here also niches and carving, pinnacles, finials and crockets were lavishly decorated with blue, red, green, purple and burnished gold-leaf. Altars, shrines and tombs of marble, alabaster, gilded bronze, were everywhere, together with screens of wrought metal, and stalls, panelling, pulpits of carved wood. And in the midst of this solemn splendour moved prelates and priests in vestments of gorgeous stuffs stiff with fine needlework and heavy with uncut gems. Add, for nearly every religious service, music of a degree of nobility and beauty such as is far to seek now, together with a ritual that had all the elements of epic drama, and you have in a word the greatest assemblage of supreme arts ever devised by man.

Of these assembled arts, that of stained glass can still be seen in its perfection at Chartres, and the same was true only a few years ago of Reims. Bourges has much, also Troyes and Poitiers, while a few scattered windows are to be found here and there. It was a great art and the only quite new one devised under Christianity. Its glory came in the thirteenth century and lasted well into the fourteenth, when it began to degenerate into the pictorial, so losing its character and most of its beauty. There is no better study of the great glass of the Middle Ages than that in Henry Adams' "Mont-Saint-Michel and Chartres." The glory of this unique art has only achieved general recognition during the last twenty years, but the sculpture of the time still lacks due appreciation. At its best it forms one of the great schools of sculpture, not unworthy to stand with that of Greece and that of the early Renaissance. The statues and carvings of Vezelay are pure design, quite without realism, and mingled of Byzantine and Celtic elements; those of Chartres are monumental in their hieratic formalism, but with Senlis, Laon, Reims and Amiens we come to perfectly balanced and competent work, which is at the same time almost Greek in its nobility of mass and line, poignantly human in its tenderness, humour and appeal, and full of the purest and most exalted devotion.

The once omnipresent painting has practically disappeared, except for early work of the eleventh and twelfth centuries in central and southern France, now almost faded away, while the arts of enamel, of the gold-smith, of wood carving, of embroidery and tapestry weaving, hardly fall within the scope of this chapter. It would be a pleasure to take up the great allied arts of music, liturgics and dramatic ceremonial, but these also are beyond the limits of the present consideration and are dealt with elsewhere in this volume; they are mentioned here for the sake of indicating the multiplicity of the arts of the time and the manner in which all were combined by architecture into an united whole.

It is sometimes said that the churches of the Middle Ages were "the Bible of the people." This is true in a way although the book itself was sufficiently available to those who could read. The wealth of art taught more by symbol than by exact representation. Everything was symbolic in the Christian religion and its arts, from the days of the catacombs down to the Reformation. It is well to read Émile Mâle's "Religious Art in France" just to see how this quality penetrated and enlivened everything that was done. Realism and literalism only came in with the sixteenth century, and with their advent the element of poetry disappeared from art, which shortly died when it was bereft of this life-giving breath.

There are two matters connected with Gothic architecture that may be associated with this quality of symbolism, and of late both have caused considerable discussion. It is of course a fact that all Christian architecture, from the Lombards to the Renaissance, scrupulously, and sometimes violently, avoids all mechanical regularity; horizontal lines are seldom parallel, the spaces between columns are not the same, the chancel is frequently diverted several degrees from the axis of the nave, string courses and cornices do not follow horizontal lines but rise and dip in long curves, while even the verticals of the columns and walls slope outward; even the floor is not level but pitches upwards toward the altar. These irregularities have long been known, and Professor Goodyear has been largely instrumental in demonstrating that they are neither the result of carelessness and incapacity nor of the work of time. They are certainly intentional, and the question is raised as to the intent. It seems probable that the Roman building guilds had inherited something of the old Greek principle of "refinements," and that these were handed down to their illiterate successors in the Dark Ages, who misconstrued them and subjected them to extreme distortion. When the Lombards began building in the eleventh century they adhered to this practice, exaggerating it still

more, with the result that their first churches are incredibly irregular in plan and elevation. The good sense of the Norman and the logic of the French put a stop to the practice, but with the latter there was a clear return to a more moderate irregularity, and the reason for this probably was that they were too good artists to endure for a moment the dryness and rigidity of anything approaching the mechanical. In other words they were finding for themselves the secret and the value of the old Greek refinements. With this went probably a consciousness of the fact that this same mechanical exactness would work against good acoustics, so there was a practical as well as an aesthetic reason for the subtle variations that occur in all the best Gothic.

The other point is, whether the Mediaeval builders determined their proportions in accordance with some formulae either mathematical or mystical. That these proportions are marvellously fine is admitted, and the modern mind seeks for some scientific basis, or rather mathematical explanation. As it is easy to prove anything by means of an arbitrary cypher, after the fashion of the Shakespeare-Bacon controversy, so is it equally easy to draw geometrical lines with a triangle and a pair of compasses over a few well-chosen drawings and prove that this architectural cypher also fits. This seems an unnecessary and probably a misleading device. There is some subtle relation between good proportions on the one hand and geometrical figures and mathematical formulae on the other; what probably occurred was that the builders felt this rightness of proportion by a sort of instinct, and that therefore their compositions fit roughly into these mathematical or geometrical conditions, but it is most improbable that the matter was determined in accordance with formulated and standardized laws. The great results achieved in the architecture of the Middle Ages are due to experiment and to native instinct, not to the application of those mechanical methods which are the product of the last century.

IX. THE LAST OF FRENCH GOTHIC

The crest of Mediaeval civilization and Mediaeval art came during the last quarter of the thirteenth century, and then the curve began to decline. The fall of Jerusalem in 1305, the capture of the Papacy by the French crown and the exile of the Popes at Avignon in 1309 were blows from which society could hardly recover, while the opening of the Hundred Years' War between England and France, in 1328, brought in an era of catastrophe. For a century Christian art in France declined, but in the midst of wide desolation something new appeared without warning, and almost at the very moment when Ste. Jeanne d'Arc was born, who was herself to save France for another period. Flamboyant Gothic begins with Pierre de Craon's Church of Notre-Dame-de-l'Épine near Reims, dating from 1418, and continues to the church at Brou about a century later, and includes many small, exquisite churches such as Caudebec and Saint-Maclou, Rouen, towers like that of the west front of the cathedral in the same city, and more chapels and porches than one could name. In the very midst of terror and misery a whole people turned to beauty as a sort of saving grace. The style is this; sheer beauty, rioting in exuberance and the most consummate craftsmanship. It is not really a style at all but a wonderful scheme of decoration. After the expulsion of the English, France recovered rapidly, and while religion declined, wealth enormously increased through revived industry and commerce. No more great churches were built, but secular architecture made great strides, filling the towns with the fanciful, high-gabled, elaborately carved and painted houses of the wealthy burghers, and the countryside with endless châteaux and villas of the most varied, picturesque and even fantastic design. The house of Jacques Coeur in Bourges, one of the first of the great bankers and financiers, is a good example of the great town-house, while Eu, Chateaudun and Chénonceaux are types of the splendid castles of the nobles.

This was also a period of brilliant advance for all the

other arts, particularly that of the workers in metals, the wood carvers and the weavers of tapestry. Throughout the fifteenth and sixteenth centuries this latter art went on from one triumph to another, though the most perfect of the work was produced in Flanders. It was now that painting became modern and secular, and the true French school came into existence. Constantly the new influence of the Renaissance out of Italy is permeating architecture and all the other arts, sometimes with results that are both bizarre and entertaining. Under Francis I there is a brief period when the old Gothic and the new classic merge in a certain unity, as in Saint-Jacques, Dieppe, and with the accession of Henry IV in 1589, the Renaissance assumes full control.

Before this, however, there came the last rapturous outburst in the shape of the Cathedral of Beauvais. In conception and intent it was the most superb and stupendous church in Christendom; taller than Amiens by far, more slender and graceful than Bourges, richer in design and ornament than Reims. It was a monument of sublime aspiration and of an almost insolent self-confidence. From the time of the Abbot of Saint-Denis men had been striving to express the inexpressible, now they determined to accomplish the impossible. The choir, crossing and transepts rose to dizzy heights in the air, reinforced by buttresses that were slim towers, carved and ornamented like a piece of jewelry, and with vaults almost invisible supported by slim columns like lily stems. No sooner was the wonder accomplished than it fell down, and was promptly rebuilt with added columns and reinforcements, and a spire over the crossing five hundred feet high. Then this also collapsed, and the end had come. The central tower was never rebuilt, the vast nave never even begun, and so the fragment stands, a monument to an ambition that o'erleaped itself, but to an aspiration that could disregard material things altogether — to its own undoing in the end.

It is a far cry from this faery imagining of the North to the

dim and low and heavy and even fumbling Romanesque of the South; from the sixteenth back to the eleventh century, but it is necessary to take up another of the scattered threads of artistic development, even though it led to little in the end, for it was a style of great possibilities, and under different conditions might have evolved into the dominant form of Christian building. While the Normans were high-heartedly hacking out their vigourous new style in the North, the South, from Provence up as far as Poitou, was far from idle. As has been said before, the trade-routes across the Mediterranean had brought in much inspiration from Syria and the East, and from the year 1000 onward these seeds were growing into something unique and significant. In a way it is Byzantium trying to establish itself in the West, and though it failed in the end it made a good fight. Arles, Toulouse, Cahors, Périgueux, Angoulême, Aulnay, Poitiers, with the whole mountain country of the Auvergne, tried one experiment after another with great daring, ingenuity and imagination. When the Lombards and the Normans were struggling with the vault, the southerners wrestled with the dome, after abandoning the barrel vault as hopeless, and they produced many most striking, and sometimes beautiful effects. Angoulême and Cahors are both long churches with domes instead of vaults, and Le Puy also, while Saint-Front, Périgueux, is (or was; it has been villainously rebuilt in the nineteenth century) a replica in form of San Marco in Venice. With the dome the pointed arch is constantly used, and the effect is striking if not always convincing. Very different are the east ends of these southern churches, which are quite Syrian in motive, with semi-circular apses, and ambulatories and radiating chapels. Issoire and Clermont-Ferrand are good examples, and the piling up, on the exterior, of curving chapels and aisles with their beautiful round-arched windows, their brilliant carving perfectly placed, and their inlay of coloured lava and other stones in geometric patterns, is novel and admirable to a degree. The latter of these two

churches is singularly beautiful throughout, very slender and well balanced and lighted after a most dramatic fashion.

The west fronts are no less interesting, particularly Notre-Dame-La-Grande, Poitiers, and Angoulême, for they are carved from sill to peak with the richest possible ornament of Byzantinesque foliage, statues and bas-reliefs. As for the doorways of Saint-Trophime, Arles, and Saint-Gilles, nearby, they are isolated examples of a peculiar and perfect art. As said before, they come in essence from Syria, but their real character is something entirely by itself. Most of the other work of the time, as at Poitiers, is turgid and overloaded in its gorgeousness, but this is restrained, pure and majestic, with a perfection of craftsmanship that is almost Greek. It is a style (or styles) of immense promise, but it stopped short in its development when the Cistercians and their Gothic took the field with the victorious Franks. Saint-Sernin, Toulouse, was its greatest achievement in point of size, but after this there was nothing. Romanesque had become too sumptuous and even profligate in its reckless richness and expense, like the society that stood behind it, and the world was ready for something more clear, simple, logical and austere, as well as economical. The answer was Gothic.

X. ITALY, FLANDERS AND SPAIN

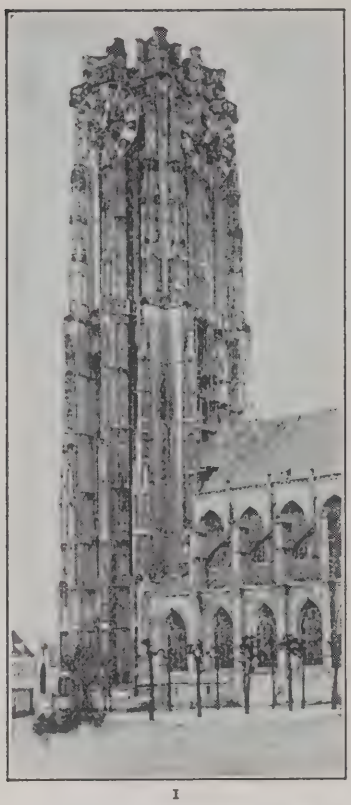
I have followed the development of Christian art in France because there it was most constant and consistent, and because what we call Gothic was its own peculiar product, while there it found its most perfect expression. It was however an art of all western Europe and it was more or less an accident that to France was given the task of bringing it into being. All the Christian peoples used it instinctively, except the Italians; even the Germans beyond the Rhine took it up eventually, though only in its decadent forms, and in Flanders, Bohemia, Spain, and particularly England, it was worked

out in accordance with the temper and race instincts of the different peoples into varied and consistent and novel forms. Italy could do nothing with it, it was too essentially of the North, and the Lombard blood that had played so vital a part in the very beginnings seems to have lost itself completely in its admixture with Latin strains. The true Mediaeval art of Italy is that curious and stimulating style that shows itself best in Pisa, Pistoja and Lucca, a variant of the Tuscan Romanesque, though in Venice, of all places, there was a brief episode that is Gothic in spirit, and measurably in form, even if it runs far afield in principle. The Ducal Palace and the others of the great merchants and nobles that line the Grand Canal, are marvels of singular beauty, but their vogue was brief and they had no influence outside their own lagoons. Yet another singular style showed itself in Sicily, that ancient "melting-pot," of many races — Greek, Roman, Jew, Arab, Norman, Spanish and Teutonic. The Capella Palatina, Monreale and many less important churches are marvels of integration, where Roman columns, Arab woodwork and inlay, Byzantine mosaics and Gothic arches are mingled after a most irrational fashion that results nevertheless in perfect unity and the most striking beauty.

The three really great schools of Gothic outside France are Spain, Flanders and England. In Flanders there were many large and notable churches of the early period, as Tournai, but during the great epoch little of importance was produced. From the middle of the fourteenth century, however, there is a brilliant advance, and the Flamboyant period is full of masterpieces. The cathedrals of Antwerp and Malines are marvels of delicate fancy and pure poetry, their great towers, intricate in design and wonders of craftsmanship, being amongst the most beautiful of record. It is in the great town halls and guild halls of the fourteenth and fifteenth centuries that Belgium stands preëminent, and these are amongst the most perfect products of Mediaeval architecture. The Cloth Hall of Ypres was the noblest of

INTERIOR, CAPELLA PALATINA

INTERIOR ARCADE, CATHEDRAL OF MONREALE



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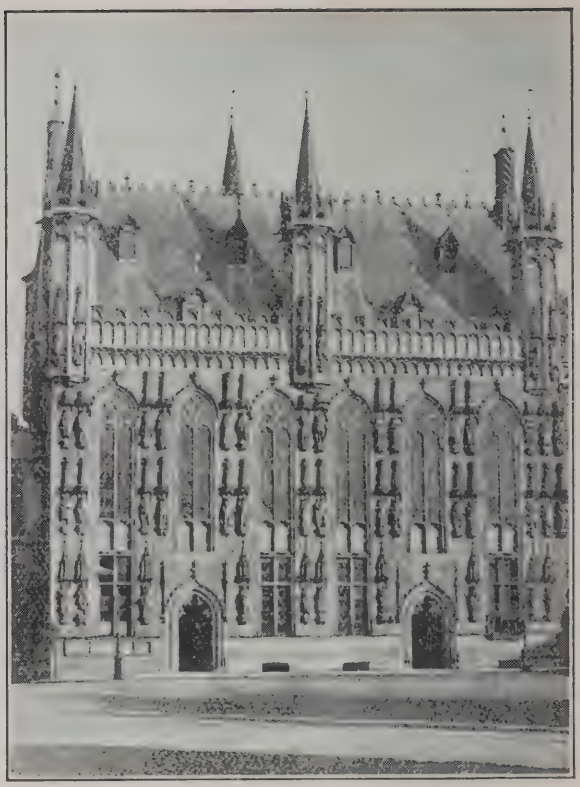

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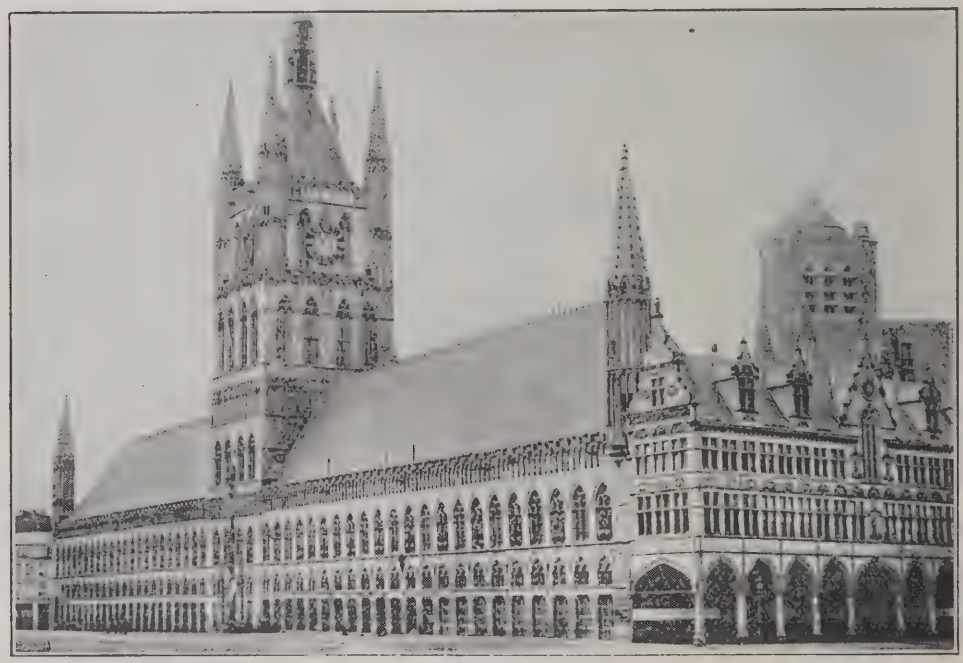

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1. WESTERN TOWER, CATHEDRAL OF MALINES
2. TOWN HALL, BRUGES
3. CLOTH HALL, YPRES

PLATE 31

them all and was actually of the late thirteenth century. A building that was unique in its splendid simplicity and grave dignity, it was destroyed down to the last stone by German bombardment in the Great War. The Town Hall of Arras met with the same fate and exists now only in memory. The two great halls of Bruges escaped unscathed, and of these the Town Hall is a masterpiece of pure design; it is late fourteenth century, extremely noble in its proportions, and its many niches once contained statues of all the Counts of Flanders, painted and gilded by none other than the brothers Van Eyck; statues which were wholly destroyed by the French Revolutionists. Amongst the other notable town halls are those of Brussels, Antwerp and Audenarde, with the incredible jewel-box of Louvain (inexplicably spared when the rest of the town was destroyed in 1914) closing the list.

The chief glory of Flanders in the later Middle Ages was its work in the allied arts of the gold-smith, the wood carver, the makers of tapestries and the illuminator of manuscripts, and with Memling, the Van Eycks and Van der Weyden painting suddenly achieved a place second to none in history. All these arts were intimately associated with the Church and inspired and fostered by it, but close consideration of them does not belong in this chapter.

The Mediaeval architecture of Spain is, of all the Christian arts of Europe, least well known, and this is unfortunate, for not only has it wholly escaped the Reformation, and very largely Revolution and Restoration, it is also most varied, pliant and original. It is doubtful if it contributed anything to the development of structural organism, but it certainly, in all periods, refused to be bound to any one particular mode. The conditions of the time made this natural if not inevitable. All of the Visigothic civilization, such as it was, had disappeared under the wave of Moorish invasion, and until the time of Charlemagne it was wholly Mohammedan, with its own culture, in many respects of a very high order, and its own government under Moorish Emirs. Very slowly the in-

vaders were pushed back, until they held only Granada and a fringe of the south, and then this was taken away, and the Moors, with deep lamentations, were driven out from the terrestrial paradise they had made. The Christian conquest of Spain chiefly took place in the eleventh and twelfth centuries, though it was the middle of the thirteenth before Seville and Valencia were redeemed, while Granada did not fall until the year Columbus discovered America.

As the land was progressively freed, southern France simply lapped over the Pyrenees and extended itself into the plains of Castile, Leon, Aragon and Cataluna. It was to France that the emancipated lands looked not only for bishops and civil administrators but for master builders as well. Between the Romanesque art of Burgundy and Toulouse and that of the eleventh and twelfth centuries in northern Spain there was substantial identity. The Romanesque churches of Leon, Avila, Gerona, Salamanca, Santiago, are hardly to be distinguished from those of Provence and Aquitaine, except that perhaps there is a stronger admixture of Byzantine qualities, and in many cases a clear evidence of the Cistercian fancy for short, simple chancels and the other elements of the austerity that characterized this order, then in the first flush of its vigour. Many of these churches are of enormous size and somberly beautiful, as for example, Santiago da Compostella, while their great cloisters with their sumptuous carving are amongst the most beautiful in the world. It was largely from these monuments of Spanish Romanesque, as well as from the kindred art of Auvergne that H. H. Richardson drew his inspiration for the style he made so popular in the United States for the twenty years following 1875, the wonderful lantern of Salamanca Old Cathedral being in some sense the prototype of the tower of Trinity Church in Boston.

It was monastic influence that determined that ritual arrangement of Spanish churches which has held to this day but which has disappeared from every other great church in

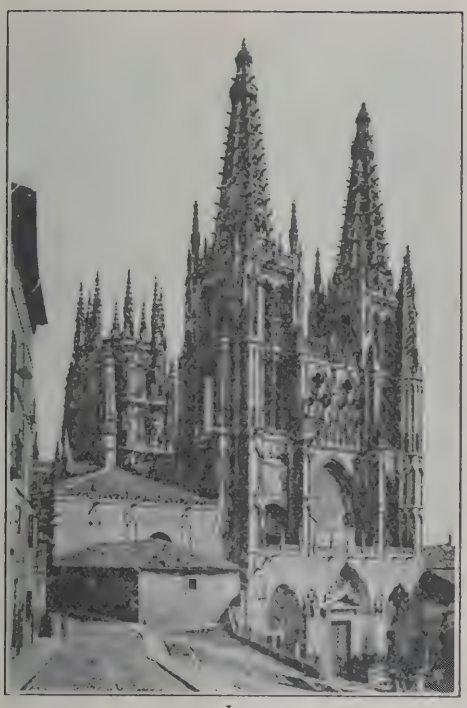
Christendom except Westminster Abbey, that is to say, the shallow chancel containing only the sanctuary and the high altar, with the great choir enclosed by solid screens and extending far beyond the crossing into the nave. The Spanish arrangement is curious in that the enclosed choir is usually to the west of the crossing, with a railed passageway connecting this with the sanctuary, the people occupying the crossing and transepts and so coming in a way between altar and choir. This disposition of parts, which permits great magnificence in ceremonial processions, is not one which generally appeals to modern taste, in spite of its real democracy, but it was universal in the monastic churches of the Middle Ages, and while the prolonged choir has been swept away from the many English cathedrals which were once but conventual churches, and was seldom adopted in cathedrals or parish churches, it remained the established custom in the great cathedrals of Spain which were not monastic foundations.

These monuments of fully developed thirteenth century Gothic are amongst the most noble works of the time. Street does not hesitate (mistakenly I think) to pronounce Toledo the finest Gothic church in the world, and Burgos and Leon as only second to this in perfection. That all these were the work of imported French master-builders is highly probable, and the tradition that makes Burgos the product of a German architect is not to be credited. Toledo is a great five-aisled church with both aisles carried around the sanctuary, and in every organic respect it is pure French Gothic of the quality of Amiens or Bourges though inferior in its proportions. Here and there, as in the arcades of the triforium, Moorish elements are used in a decorative way, but it is wholly consistent throughout, and the magnificence of its altars, shrines, monuments, screens and stained glass give it a quality that sets it apart by itself. Burgos is equally French though technically less perfect, while the open-work west spires are much later and possibly suggested by similar features in the Rhineland, and the marvellous central lan-

tern is pure Spanish sixteenth-century of the most perfect type. The whole church has been built onto with chapels and accretions of all sorts, fourteenth-century, late Gothic, Renaissance, and is rich with sumptuous fittings of every kind and period, all of which give it a vitality and a personality that are unique. Leon is in plan strikingly similar to Reims, with a nave of six bays, transepts of two bays each, and a chevet of a single ambulatory with five polygonal, radiating chapels. In its supports it is more slender than Amiens, almost as delicate as Beauvais was planned to be, and the whole fabric seems but a frame for window openings filled with superb stained glass.

Barcelona Cathedral is a merging of French and Spanish elements, the east end being not unlike Paris, while the nave opens out into wide, airy spacings that have nothing French about them. The church itself is bound around with a continuous chain of chapels and it is not unusual to find forty masses being said simultaneously at as many altars. It is all pictorial to a degree, with its lofty galleries and endless chapels, and its broken lights and shadows. In a way it is a half-way step to a peculiarly Spanish type of church found chiefly in this region, the huge structures with few columns widely spaced, and enormous floor areas. Two of these churches are also in Barcelona; Santa Maria del Pi and Santa Maria del Mar. A third is at Palma on the island of Mallorca, but the most extraordinary is the Cathedral of Gerona which is one vast nave, without columns, and stone vaulted over an area no less than 73 feet in width. At the east end a perfectly normal apse with choir, aisles and chapels is affixed to this amazing hall which is as wide as choir and aisles together. Of course the object was to provide the largest unobstructed floor area, in apparent revolt against the standard monastic type with its central choir, and as a matter of fact these churches easily accommodate from two thousand to three thousand worshippers in a highly concentrated space.

The fifteenth century brought the wealth of the Indies to



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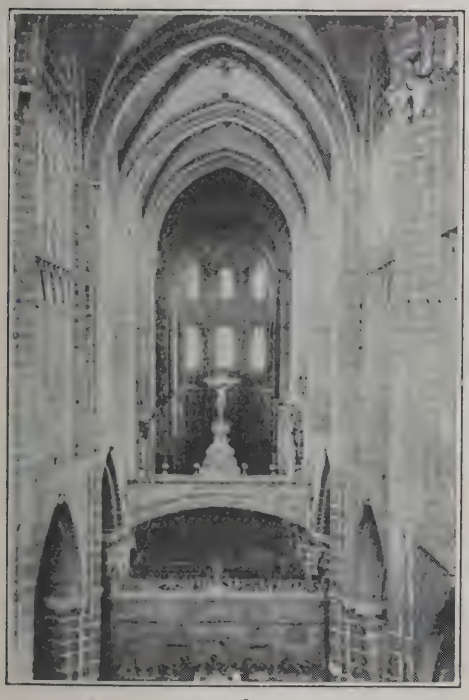

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1. EXTERIOR, BURGOS CATHEDRAL
2. INTERIOR, PALMA DE MALLORCA CATHEDRAL
3. INTERIOR, AVILA CATHEDRAL
4. INTERIOR, SALAMANCA OLD CATHEDRAL

INTERIOR, TOLEDO CATHEDRAL

INTERIOR, SEVILLE CATHEDRAL

Spain, wealth unexampled and in the end fatal. Cathedrals and churches were enriched with gorgeous decorations of all sorts and treasure incalculable in gold and jewels. Three great cathedrals were built, Salamanca, Segovia and Seville; Gothic in their general scheme, slender, fanciful, but with detail that verges more and more closely on Renaissance, as did all the art of the time, until we get such an extraordinary production as the front of Santiago da Compostella which is a Gothic project worked out wholly in terms of the Renaissance. Of these churches Seville is the most stupendous, one of the most imposing structures in the world. When it was projected the Cathedral Chapter put themselves on record as saying, "Let us build such a church that those that come after us will say we were mad." The judgment of posterity is more favourable than they had anticipated, for no one would attribute madness to the creators of this supreme work of art, but rather a sublime devotion and self-confidence that were justified by their works. After having seen every great cathedral in the world except two, I give it as my judgment that the interior of Seville is the noblest of all. It is set out on a larger scale than any other and it is simpler in its general scheme. Where English cathedrals are three-aisled, and the French also, with one or two exceptional five-aisled examples such as Notre Dame and Bourges, this is no less than *seven* units in width, the outer aisles being divided into great chapels. The nave is fifty-three feet wide and one hundred and twenty-feet high, the doubled side aisles are thirty-six feet wide and their vaults rise to the same level of eighty-five feet. The wide spacing and enormous dimensions give an effect of sublimity that is unequalled, and the vast columns, no less than twelve feet in diameter, seem as slender as the stems of palm trees, an effect that is enhanced by the springing of the vaults of the side aisles in four directions like the curved fronds of the palms. The organism is of the simplest, with no triforium, simple vaults, very delicate pier-contours and mouldings, and a sparing use of windows,

from many of which the tracery has been removed, leaving simple lancets. The capitals are no more than narrow bands of carving, the arches do not overhang the shafts and are stilted for almost five feet. The effect is of sublime calm, solemn simplicity and a vital lifting into the air that find their equal nowhere else in the world. The colour is pearly, almost opalescent, the chapels are crowded with gilded altar pieces and innumerable pictures, while the great reredos fifty feet wide with ten foot returns, and an hundred feet high, is a solid mass of late Gothic sculpture in wood entirely covered with gold, now dulled to a luminous bronze. The three sides of the sanctuary and the entrance to the choir are filled with rejas or screens of richly wrought iron gilded, and the choir itself is surrounded by walls of coloured marble, alabaster and gilded metal.

If one were to choose the supreme works of Gothic architecture they would be, perhaps, the west front of Notre Dame, the chevet of Le Mans, the crossing tower of Gloucester, the interior of Seville and the general composition of Reims. There are many great church interiors in the world, Chartres, Bourges, Exeter, Westminster, Toledo, but Seville matches them all, and finally excels.

Although the names of all the great master builders of Spain have been preserved, there is one great omission; no one knows who created Seville, the culmination of all. His name is lost, perhaps forever, but he was unquestionably one of the great geniuses of all time. The two important churches that followed after Seville — Salamanca and Segovia — were built by Juan Gil de Hontañon and his son, who worked under the influence of the Andalucian wonder, and both have fine qualities, particularly in view of the fact that they were built at a time when all the rest of Europe had long given itself over to the Renaissance. Spain never really, as a people, outlived Mediaevalism. They are Mediaeval today, in the best sense, however modern and "progressive" may be Barcelona and Bilbao, however corrupt and inefficient the

parliamentary government at Madrid. Gothic architecture continued long after the Renaissance had conquered the rest of Europe, but in the end the art of the people could not stand against the new fashions that were supported by the Court and by the new nobility raised up on the foundation of the gold of the Indies; presently it vanished away and was replaced by the romantic Renaissance of the localized baroque and the dull formalism of the Court architects of Philip II.

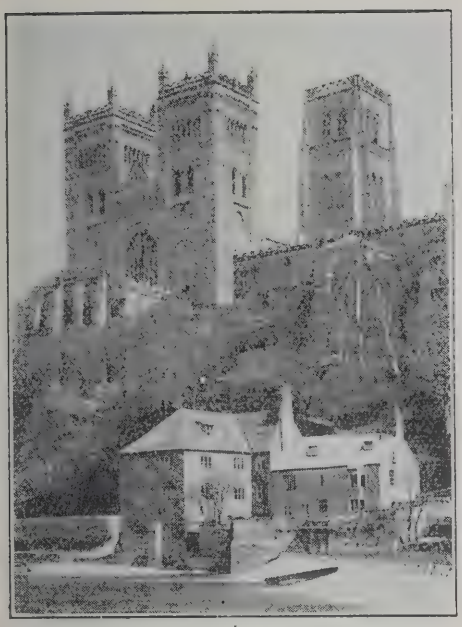
XI. NORMAN AND GOTHIC IN ENGLAND

I have left the consideration of Christian Architecture in England until the last, partly because it was more self-contained and definite than the other national variants of the original Gothic of France, and partly because it is more directly in our own line of succession. In many respects it diverges widely from all other forms while it is always more individualistic and varied. It does not inherit directly from France, in spite of William of Sens, but rather from Normandy, and it is in a way a working out in another land of what was initiated by William of Volpiano and Lanfranc, while continental Gothic is the reaction of French and Burgundian temper to the same motives. For one thing it never cares very much about logic and therefore the structural coherency and organism that obsessed the French make little appeal. Generally speaking, English Gothic is illogical and incoherent, while it varies greatly as between periods and even as between counties. English builders are constantly doing things that in comparison with Bourges or Soissons or the Sainte-Chapelle are illiterate, and yet it reaches heights of idealism and passionate poetry that have few equals. It was always trying for something it could never quite achieve, and in itself the effort is curiously appealing.

It all begins of course with the Norman abbeys, those low-lying, interminable structures that leave one wondering

at their use in a land where the whole population was probably less than that of London today. Of course the whole Christianity of England, from 1066 to 1500 was woven through and through with monasticism, and with few exceptions the great churches were all attached to religious houses. Nor were they for the use of the monks alone, who seldom numbered as many as an hundred in any one house; they belonged almost equally to all the people within walking or riding distance, for the monks were the teachers, leaders and defenders of the people. Big as were such churches as Glastonbury, St. Albans, Winchester, Canterbury, Durham, they were filled many times in a year by a larger congregation than assembles in the fashionable churches of a modern metropolis, and as they were always being lengthened or extended, the inference would be that they were too small even then. If a church were a place of pilgrimage it could never be built large enough, so great were the crowds that besieged it. Moreover in those days all the people went to church all days, where now a few satisfy themselves with an hour on Sunday morning. Even a few million people with whom church-going is chronic, means a good deal of space to accommodate them, so it is not surprising that England should have been covered for five centuries with her "white robe of churches," which includes not only monastic houses, but cathedrals, parish churches, and guild and chantry-chapels without number. With more than half of them gone, the rest are now far too big for a population ten times as numerous.

The Norman of England is more varied than that of Normandy, and more supple, though it is static so far as structural development is concerned, never paralleling the course that was followed in Normandy and France which led almost inevitably, and by swift changes, to the perfected Gothic. It is very splendid and mobile at Glastonbury, Ely, Peterborough, Tewksbury, Durham, but in the end it is structurally where it was in the beginning, though overlaid with most



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1. EXTERIOR, DURHAM CATHEDRAL
2. EAST END, GLOUCESTER CATHEDRAL
3. EAST END, LINCOLN CATHEDRAL

PLATE 34

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1. INTERIOR, WHITBY ABBEY
2. CHAPEL OF NINE ALTARS, FOUNTAINS ABBEY
3. CROSSING, GLASTONBURY ABBEY

PLATE 35

beautiful carved ornament that is closer kin to that of the south of France than it is to that of Normandy. When the change comes it comes instantly, and as the result of an importation. A certain William came over from the French city of Sens to build a new choir for the Norman Canterbury, after the fire, and he built it quite frankly in his own French fashion. He was succeeded by another William, this time an Englishman, and at once you feel the working of a new and local and racial spirit. "Early English" gets far away from Canterbury and Sens and in a little while becomes a style quite independent both of France and Normandy. There is evidently a strong Cistercian influence working, and the style at first is plain and severe while the supplanted Norman of the Benedictines had become unduly luxurious. Narrow windows, singly or in groups, without tracery, and sometimes of astonishing height, are one of the marks of the style, with rather grim buttresses, coarse offsets, plain, crude vaulting and a great economy of ornament. Soon however the sense of beauty and fitness begins to work and the whole scheme passes through a process of refinement until it achieves the fine clarity of Lincoln, Beverly, Whitby, Tintern, Netley and Fountains. All the while the schools of carving are being raised to a higher level, and at the crest of the style the ornament, particularly of the capitals, has become strikingly beautiful and original. Even more than their continental fellows, the stone carvers find their inspiration in the herbs and flowers of the garden and field, and out of them they produce some of the most beautiful pieces of decorative carving that architecture has to record. The same is true of mouldings, pier-sections, archivolts, etc. In France during the great period the whole tendency was towards simplicity and a few type forms, but in England it was just the other way. Holding tenaciously to the old Norman monastic system, and very wary of flying buttresses, the early Gothic builders retained the great five-foot walls which in themselves were strong enough to take the thrust of a vault

over a narrow nave, so they had five-foot pillars and arches, and these offered a wonderful chance for novel, varied and beautiful clustering of shafts and elaboration of arch-moulds. In this respect English Gothic easily takes first place.

The same searching inventiveness shows itself everywhere, particularly in window tracery and the composition of west fronts. As soon as the racial sense finds itself in "Early English" this tracery begins to evolve into all sorts of novel forms, not all of them beautiful, it must be confessed. As for the west fronts, these are as far as possible from standardization. France was content with one perfect scheme, but the English builders — like the Spanish — tried for something new in each new church. The French plan with its great cavernous porches was most unpopular, partly because most of the great churches were monastic and not secular. Usually the people entered through a great north porch, and the west doors are, like Wells, small exits chiefly used for processions. The west front innovations begin with Ely and Tewksbury, both surprising and extremely dramatic compositions, and then the progress is on towards the huge and unbeautiful wall of Lincoln and the quite illogical and inorganic arcade of Peterborough, a scheme that is so heroic in its proportions and sublime in conception that it does not matter if it is irrational. Now and then there is a conspicuous failure, as at Salisbury, but these accidents are unusual, and generally speaking the English west fronts, though never quite equal to the perfect finality of Paris, Reims and Coutances, are very wonderful examples of creative genius.

As for the English plan, it is equally far from those of France and Spain. Where these are highly centralized the English plan is sprawling and diffuse. The nave is always narrow, low, and exceptionally long, as is also the choir; the transepts spread out far beyond the aisle walls and there is sometimes even a secondary transept in the choir, as at Lincoln and Salisbury. The easterly termination is practically always square and there is frequently a big retro-choir

beyond the high altar and even an easterly transept like the "Nine Altars" of Durham and Fountains. The chevet with its polygonal apse, processional path and radiating chapels came in with the Normans and was quite magnificent at Beaulieu, Lincoln and Tewksbury, but it at once fell under the ban, probably because of Cistercian disfavour, and from the beginning of the Gothic period it was quite discarded, no return being made except in the anomalous case of Westminster Abbey which was the conception of a French master-builder under the direction of a Francophile King. The high tower at the crossing of nave and transepts is as characteristic of English Gothic as its absence is of the French, and it comes, like so many other things, directly from the early work of Normandy. It is invariable in cathedrals and abbeys, and general in parish churches, and is certainly one of the most striking and beautiful elements in the style.

English Gothic is never static, it is always growing and changing. No sooner is Early English fairly well determined than it begins to merge into Geometrical which in its turn becomes Decorated and then disappears to give place to Perpendicular. Roughly speaking the first is thirteenth-century, the second and third fourteenth-century and the last fifteenth-century, after which the Reformation brings Christian art to an end for a long period of years. Some of the finest monuments date from the point where one mode was changing to another; for example St. Mary's Abbey, York, which came at the end of the early English period, and Guisborough which is the last of the Geometrical. Both these are fragments only and one must reconstruct from remains, only too scanty at best. In judging English architecture it is necessary to bear in mind that it has suffered from desecration and spoliation more than any other, and apparently the finest examples were the ones most completely destroyed. The suppression of the monasteries (see "Henry VIII and the English Monasteries" by Cardinal Gasquet) completely wiped out many of the greatest works

and left scores of others only picturesque ruins; this calamity was followed by the vandalism that took place under the Protestant Regents of Edward VI, this by the savage destruction under Elizabeth, this by the Puritan fury of the Commonwealth, and the sequence closes in the nineteenth century with the pulling down of much that remained "for revenue only," and the "restorations" of Sir Gilbert Scott, Lord Grimthorpe and other zealots, which was in itself but a continuation of the appalling vandalism of Wyatt in the eighteenth century. It is a miracle that anything remains. York Abbey has been referred to; so far as one can judge this was the most beautiful church in England, and it stood, roofless and desecrated, until the early nineteenth century when it was pulled down and the ivory marble of which it was built burned to make quicklime. Guisborough is now nothing but its east wall standing as the chief decoration of a gentleman's park. Glastonbury is only a few crags of gaunt masonry, while such marvels as Evesham and Beaulieu have left not a stone to mark their sites.

It is hard to pick special examples to illustrate the various periods, for in spite of fate and fanaticism there are many from which to chose. The ruins of Netley, Whitby and Tintern are typical of the three first forms of Early English, and Beverly Minster of the final phase, with the west front of Wells added for full measure. For Geometrical and Decorated, one would take Exeter for its interior, the easterly terminations of Lincoln, Wells and Carlisle, while for general composition, Durham, Wells, Lincoln, Ely, York and Canterbury are preëminent.

One of the particularly English inventions of this middle period is the chapter house, a polygonal building, standing by itself, and singularly beautiful in its composition and its masterly vaulting. Perhaps its prototype was the "Temple" church, the motive for which was brought home from the Holy Land by the Crusaders, but if so the result was in the end a very different thing altogether. This unescapable

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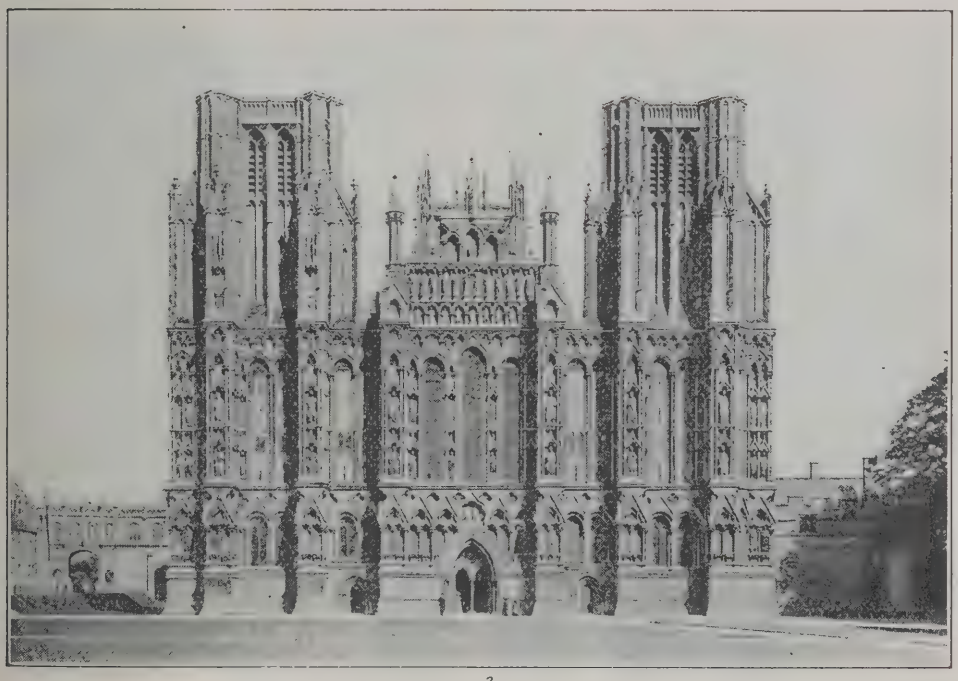

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1. WEST FRONT, PETERBOROUGH CATHEDRAL
2. EXTERIOR, CANTERBURY CATHEDRAL
3. WEST FRONT, WELLS CATHEDRAL

PLATE 36

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1. INTERIOR, PETERBOROUGH CATHEDRAL
2. INTERIOR, KING'S COLLEGE CHAPEL, CAMBRIDGE
3. INTERIOR, WESTMINSTER ABBEY
4. INTERIOR, EXETER CATHEDRAL

Anglicism that insisted on setting its mark on whatever was done shows itself amazingly in Westminster Abbey which was intended to be, and tried to be, a typical French church, but worked itself out into something peculiarly English, in spite of its Gallic plan and structural scheme, just because the workmen were all of that ilk and simply could do nothing else. The whole atmosphere is as English as the Chapel of Henry VII which has been built on at the east end.

This chapel and its like are exponents of what was really the one entirely original English style of architecture; there is nothing remotely like it on the Continent and it came into sudden existence after the decline of the Decorated style in the fourteenth century and seems in no way to have grown out of it. It is generally known as Perpendicular. Beginning like French Flamboyant as a scheme of decoration, it proceeded to develop for itself its own novel system of construction whereas that other never went beyond its sphere as a particular form of ornament. Two places claim its birth, Winchester and Gloucester, but whether William of Wykeham, bishop, statesman, educator and architect, was its creator, or another, is a matter not yet determined. At both places the work begins as a sort of overlay or scaffolding of panelled stone wainscot and slender mullions, applied to a massive Norman original. It is perfectly unstructural, but strikingly effective with its slim vertical lines and delicate arches, many of them three centered or four centered. Decorated had already become rather amorphous with its overloaded ornament, its multiplied heraldry and its bulging, ogee curves; the new style sought to correct this by extreme formality and constant repetitions of the same geometrical designs. At first it adopted the ugly type of vaulting prevalent in the preceding work, with its criss-cross of meaningless short ribs which had supplanted the superb "lierne" vaulting of Exeter, and degraded it still further with more, and even less significant, lines, but as the style developed it grew stronger, and soon appeared that brilliant and novel

form of masonry roofing known as fan vaulting. Simultaneously the structural scheme was working itself out, for now the stone masons had become trained, competent and ingenious, the guild system had put into labour joy, pride and liberty, there was a general condition of peace and prosperity, and all things worked towards good ends. The terror of the "Black Death" was over, the war against France (bad as it was) was prosperous, and though there were ominous signs of coming troubles, they were disregarded and life went on buoyantly and with confidence.

The era of cathedral building was over, so with the exception of Bath — which is late and poor — none was constructed in this style, but it found royal favour and the support of the colleges, which were now growing rapidly, so it quickly became the accepted style for chapels of all sorts as well as for the great houses of the nobles which were fast taking the place of the fortified feudal castles. The conscious desire for beauty which had supplanted the old popular instinct, found in this sumptuous form of art a willing agent, and everywhere altars, reredoses, screens, chantries and chapels were added to the old structures, while a positive fever of church building set in amongst the parishes and the new style proved at once its mobility and its adaptability to the particular field and work.

The great examples are the royal chapels at Windsor and Westminster, King's College Chapel at Cambridge, the cloisters and Lady Chapel at Gloucester, the nave of Canterbury, and Sherborne Abbey. The towers are legion, with Canterbury and Gloucester in the lead, and as for the parish churches, the tale runs into the hundreds. From Wrexham in North Wales to Lavenham and Long Melford in East Anglia, and from Newcastle in the north to Taunton in the south, every county boasts of its individual and lovely work. Sometimes it is the recutting of a Norman church and the giving it a new fan vault as at Sherborne, one of the most beautiful interiors in England; sometimes it is wholly new work, slen-

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1. SCHLOSS ELTZ ON THE MOSELLE
2. TIMBERED HOUSES, HILDESHEIM, GERMANY
3. CITY WALLS, CARCASSONNE, FRANCE

INTERIOR, SAN MARCO, VENICE

PLATE 32

der and fairylike, as at Cirencester, or St. Cuthbert's Wells. Wherever it is found it is graceful, racial, comfortable and full of infinite charm.

Towards the end, *i.e.*, just before the Reformation, it began to lose its balance in ecclesiastical work, and to strain itself for impossible effects. The stone masons were too clever, and they tortured the logical and splendid fan vaults of Sherborne and Gloucester into extraordinary forms where vault-ribs thrust themselves *through* the vaults and great stone pendentives hung down like stalactites in defiance of all physical laws. They were daring and beautiful, but somehow one feels they ought not to have been done. Quite different were the wonderful wooden roofs which were the joiners' triumph and remain the artists' delight. The great roof of Westminster Hall in London is a masterpiece, but actually no more so than the hundreds of more modest roofs of the parish churches, wonderful in workmanship, carved and painted and gilded, and as rich in fancy as the Arab ceilings of Sicily and Spain. Of course this was also the heyday of the craftsman in wood-work of every kind — stalls, pulpits, screens — and before what has been called the "Great Pillage" it must have been almost impossible to see the interiors of the churches on account of the wealth of woodwork. Every county had its own school, but none came before those of Devonshire, Somerset and Cornwall. Much still remains, but we know from the records that during the suppression of the monasteries, the Edwardian and Elizabethian tyrannies and the Puritan cataclysm, fifty times as much perished utterly, and the mind is staggered by the effort to comprehend how it all could have been produced, and what England must have looked like, say, during the first years of the reign of Henry VIII.

It was a great art, this last racial art of England, and it did not altogether die from natural causes. When the Reformation broke, good work was still being done, though not quite of the best. There are many half-finished churches,

chapels and towers in England, standing now as they were left when the last sorrowful workman was driven away. It could hardly have lasted much longer however, for faith was getting weaker and wealth more powerful. One thing did last for many years, and that was the established type of domestic architecture. Long after the time had come when churches were destroyed and gutted rather than built and beautified, the houses of the noble, the squire and the burgher maintained the established type. All through the sixteenth century this held good, and there is not an old village or parish in England that does not to this day bear witness to the singular native feeling for beauty that once was the birthright of an Englishman, and to the enduring quality of the style he at last had made his own.

BIBLIOGRAPHY

Adams, Henry, *Mont-Saint-Michel and Chartres*. Boston, 1913.
Bond, Francis, *English Church Architecture*. Oxford, 1913.
Cram, Ralph Adams, *The Gothic Quest*. New York, 1907.
Cram, Ralph Adams, *The Substance of Gothic*. Boston, 1917.
Dalton, C. M., *Byzantine Art & Archaeology*. Oxford, 1911.
Dearmer, Percy, *Parson's Handbook*. London, 1909.
Ditchfield, P. H., *Charm of the English Village*. New York, 1908.
Durandus, W., *The Symbolism of Churches*. London, 1906.
Gasquet, F. A., *Henry VIII and the English Monasteries*. London, 1899.
Howard and Crossley, *English Church Woodwork*. New York, 1917.
Kendrick, A. F., *English Embroidery*. New York, 1905.
Lethaby, Charles, *Mediaeval Art*. New York, 1906.
Lethaby, Charles, *Westminster Abbey and the King's Craftsmen*. New York, 1906.
Mâle, Émile, *Religious Art in France*. New York, 1913.
Moore, C. H., *Gothic Architecture*. New York, 1906.
Norton, C. E., *Church Building in the Middle Ages*. New York, 1880.
Penty, A., *A Guildsman's Interpretation of History*. New York, 1919.
Phillipps, Lisle March, *Form and Colour*. New York, 1915.
Porter, A. K., *Mediaeval Architecture*. New York, 1909.
Prior, E. S., *The Cathedral Builders in England*. New York, 1905.
Prior, E. S., *Mediaeval Architecture in England*. London, 1912.
Rivoira, G. T., *Lombardic Architecture*. New York, 1910.
Ruskin, John, *Stones of Venice*. New York, 1885.
Saint, L. B., *Stained Glass of the Middle Ages*. London, 1913.
Street, G. E., *Gothic Architecture in Spain*. New York, 1914.
Vogt, Von Ogden, *Art and Religion*. New Haven, 1921.
Waern, Cecilia, *Mediaeval Sicily*. New York, 1911.
Walsh, J. J., *The Thirteenth, Greatest of Centuries*. New York, 1907.

THE RENAISSANCE

BY

H. VAN BUREN MAGONIGLE

CHAPTER III

THE RENAISSANCE

I. THE NIGHT, THE DAWN, AND THE PROMISE OF THE DAY

The romance of the recovery of man's intellectual heritage lost at the beginning of the Dark Ages, the re-birth — the Renaissance — of his mind and soul, and his restoration to the full stature of a man, is the story that will engage us here.

The progress of man toward liberty of thought and soul and conscience, freedom of body and action, is a long journey in which the Prehistoric and the Classic Ages, the Dark, the Middle Ages and the Renaissance are mere steps, mere phases of a single onward movement by no means yet concluded. From our modern vantage ground we may watch the slow advance of civilized man, bearing the precious seeds of that culture which lifts him above the beast, come out of the dim East and moving ever Westward reach the waters of the vast and lovely Mediterranean, pause in Greece and add art, philosophy, and science to the store of treasure, pass on and reach at last that beautiful peninsula we know as Italy, dowered with a soft and kindly climate, diversified by magnificent mountain ranges, hillsides for vine and olive, fertile plains for tillage and for pasture, lakes of unbelievable beauty, with long coasts as natural ramparts or offering hospitable havens for the boats of fisher and trader; and near a ford in the River Tiber marked by seven low hills a city born that first became the mistress of all Italy and later of the then known world. The genius of this Roman people, essentially practical, constructive, executive, military, political, brought order and a stern peace to the warring, semi-barbarous tribes

scattered through the land. Roads were built, and cities, and water was brought to refresh them for many miles over hill and plain. Trade prospered, agriculture flourished, and Italy waxed fat and rich under the Roman Peace.

The Mediterranean world had grown rich in things other than material. The garnered wisdom of the ages, the literature, the philosophy, the science, and the art of Asia, of Egypt, of Greece, and of Rome were the most precious part of the freight the Romans, as the vanguard of civilization, bore with them to the far places of the earth. To the north of Italy, lurking in the German forests or grazing their herds on the wide steppes of Eastern Europe, half frozen in their fens, clad in skins, brutal, savage, covetous, mischievous and destructive as monkeys, loving rapine and bloodshed for their own sake, roamed the Goths, the dreadful Vandals, and the still more fearful Huns. From time to time they descended upon the smiling southlands, snatching at what they had neither the wit nor the industry to produce, and at last, in the fifth century, when the strong Roman arm which had held them back grew weaker, they burst upon the South. They knew nothing of the intellectual treasures, the art of a thousand years, that made the true wealth of Italy. They wanted the dark-skinned women with their lustrous eyes, they coveted the gold and gems and rich stuffs and arms, the smooth wines and the fiery, the luscious fruits, the good food and the warmth and the goodly sun of the South. Heaps of slain men, ravished women, butchered babies, the smoke of burnt fields, orchards, vineyards, homesteads, villages, cities, marked their path. What they thought of value they carried off, what they could not bear away they destroyed. The laborer in his hut, the rich merchant, the leaders of public life, the savant, the artist, all were killed or fled the country. The libraries containing the learning of the antique world went up in smoke. The priceless works of art which filled the palaces and villas of the patricians were given to the torch, defiled, defaced, overturned and trodden into

the dust and blood of the sack. Attila almost made good his frightful boast that the grass never grew again where his horse's hoof had trod. He was at long last thrown back leaving Italy stripped bare behind him. Here and there some one had had time to bury some beloved statue. Here and there some scholar escaped with a precious manuscript. But, the flower of mankind slain, the flower of womankind brutalized, the children massacred or carried off to slavery, left the land so desolate and weak that five centuries barely sufficed it for recovery. Under the heaps of rubbish which once were stately temples lay buried fragments of column and of cornice; the weeds and grass grew high above them and hid them from the sight and soon from the memory of men; ignorance descended like a pall; the knowledge of the past departed and the great works of the Romans came to be ascribed, by the wretched beings who dwelt in the shadow of their ruins, to magic and the powers of darkness.

Followed five centuries of chaos, justly called the Dark Ages, which the Christian Church and the scattered representatives of civil authority strove to bring into some semblance of civilization. Slowly the instinct of civilized man toward order and organized community life triumphed. Slowly the scattered bands of barbarians, left stranded here and there as the flood of invasion receded, were absorbed into the native population and their fresh Northern blood infused into the impoverished veins of a decaying race. The secular learning of the Grecian and Roman worlds was lost, forgotten, and for it was substituted the dreary theology of the Church, in whose bosom the man of gentle birth, the scholar who had escaped with his bare life, took refuge; but the clergy, recruited from an illiterate population, were in the main as ignorant as their flocks. In spite of this it was principally the Church that rallied the scattered and broken remnants of the forces of civilization and led them forward again; the onward march was resumed, halting, stumbling, walking in darkness, but moving ever toward its

destiny, haunted now and then as by the memory of a dream with a sense of the treasure that was lost.

This was in Italy. And it may well be asked why mankind would be said to have lost its intellectual treasure while the Empire of the East still endured at Byzantium. But Byzantium held a decadent, voluptuous, and trivial society in which true culture withered away. And the wisdom of the East upon which had been grafted the learning of Aristotle was in the custody of the Moslem and so was shut away by a wall of fanatical religious bigotry from the Christian world of the West. And there were no swift ships in those days, nor railroads, no telegraph or post office, no printed books or newspapers; and communication of ideas and information was so slow and difficult that communities and whole countries grew up in an isolation incomprehensible to modern minds. And it was to the hands of Italy, not of Byzantium nor of the Moslem, that destiny had confided the treasure.

During the four centuries or so which followed the year 1000, although the power of the Church of Rome rose to its zenith in the thirteenth century, man, in Italy and in France, slowly awoke to a sense of his dignity as one made in the image of God, to a sense of his political power and value; to that spirit of intellectual independence and refusal to look at life through glasses colored by monastic and clerical thought which we know as the Lay Spirit. And as the visible sign of this spirit arose the marvellous architecture of these Middle Ages, the architecture of the Communes. In the germination and the growth of this spirit are to be seen the first stirrings of a renewed forward movement proceeding from within man himself, as it did in the days before the barbarians checked it, quite unlike the blind stumbling of the groping horde conducted by monkish leaders through the Dark Ages. And this conscious impulse led him forward to the finding of the lost treasure, to the Renaissance, the renascence, the re-birth, of the soul and mind of man. The Dark Ages are like the black hours which cluster about midnight. The

Middle Age is like the hours before dawn, when there are faint stirrings in tree and field and the fringes of the sky grow paler toward the East. But the Renaissance is the dawn itself that leads into the day, when every step is a new adventure in a fresh and dewy world, in the enchanted opalescent light of the early morning, the doubts and fears of the night forgotten; it is the spirit of Youth incarnate, blessed Youth with its vigor and its vision, and gallant, fearless curiosity. To recapture the spirit of the Renaissance, to see the world all rosy in the misty dawn, we must slough off five hundred years of sophistication, cynicism and indifference, and be young again with the men of the Renaissance. These were the men, these the fresh minds, who were to restore to mankind the treasure of Knowledge never again to be lost.

In the Middle Ages man had found God and poured out his soul in service and worship and — service and worship rendered — secure and serene in the belief that God would take care of him, was a sure refuge in time of need, turned to recapture the things of the mind, liberty of thought and conscience, the germs of political freedom, the order and measured grace of antique beauty. As a factor in the general change of mental attitude was the departure of the Church from the simple teaching of Jesus of Nazareth, so overlaid by dogma that the Throne of Grace was obscured; the development of elaborate ritual; the rise of the political power of the Church through ambitious Popes and the clerical hierarchy; the corruption of morals that made the celibacy of the clergy a by-word and a scoffing; the venality which culminated in the sale for money of the right to sin without penalty, and which so horrified a simple German monk called Martin Luther that the Reformation came about through the revulsion of his soul; the growth of arrogance and pride in the priests of a God who had taught humility and service — all these abuses had grown until there was nothing left for the man with a brain to revere save the central idea of God. Nevertheless the history of the art of the Renaissance

is closely linked with the Church, for Pope and prelate contended with King and Count in securing the service of this great artist or that, and much of the finest work of the period was of a religious character.

At the close of the Middle Ages Italy was, as Greece had been, a group of small jealous communities fighting among themselves and making temporary alliances for temporary advantage. The Papacy was aspiring not merely to the spiritual domination of the world but to political supremacy as well. The old idea of the Roman Empire had been revived and there existed a shadow of that departed power with an Emperor of foreign birth and residence, now in France, now in Germany, later in Spain, as its visible symbol and rallying point, with large and vague claims of authority and allegiance which the Popes denied under the countenance of a brief, said to have been forged, which gave the suzerainty of the Western Empire to the Bishop of Rome. To be valid the Imperial crown must be placed upon the Imperial head by the hands of the Pope himself. These two powers, the Papacy and the Empire, were in constant conflict and ultimately all Italy became either Guelph or Ghibelline — the Pope's men or the Emperor's. This great feud and a thousand minor ones, personal, political, family, dynastic, crossed and interwove their threads of interest in a web of amazing complexity. But, repeating in Italy in another way the history of the Communes in France, the canny burghers learned to take their own advantage from the quarrels of Pope and Emperor or of Count or other overlord with either or with each other, and gradually acquired the balance of power in the confused politics of Italy. This by no means meant the cessation of hostilities between themselves — discords frequently fomented by the feudal aristocracy they had cast out of their gates; as in Florence, where banishment, return to power, and counter-banishment, followed each other like the hands of a clock. By the fourteenth century, the struggle between the Pope and the Emperor having exhausted

those potentates, the Communes or Republics, weary and distracted also, fell one by one into the hands of despots or tyrants. The diversity in the political forms under which the Italians lived reflects the active mental life, the experimental and curious spirit of the period, and is reflected in its many-faceted art, of which diversity in unity is a distinguishing trait. Symonds says: "The theocracy of Rome, the monarchy of Naples, the aristocracy of Venice, the democracy of Florence, the tyranny of Milan are equally instrumental in elaborating the national genius that gave art, literature and mental liberty to modern society."

The link between the Middle Age and the Renaissance is the great figure of Dante, the first of the moderns in literature as he is the last of the men of the Middle Age. Casting aside the Latin language which had been the Mediaeval vehicle of expression, he wrote the Divine Comedy in the sonorous, flexible, melodious Tuscan dialect of the vulgar Italian tongue; for the first time a work of literature was accessible to the ears, if not to the illiterate eyes, of the common people; and Dante was pointed out on the streets with awe as the man who had descended into Hell. In painting, Cimabue, his contemporary, discarded the stiff conventionalism which had been the pattern and the mode — following the Byzantine tradition that reduced the portrayal of sacred personages to an undeviating formula of imitation of types long established — sought his inspiration in Nature itself, and his Madonna, so inspired, was hailed as a miracle by the people and escorted to the church of S. Maria Novella with tears of joy through the flower-strewn streets of Florence. In sculpture, Niccola and Andrea Pisano, by intelligent study of antique Roman fragments, initiated a movement that was to find fruition in the exquisite works of Donatello and Mino da Fiesole and to culminate in the mighty creations of Michael Angelo. Architecture was the last of the three major arts to respond to the new stimulus, the sense of growth, of rising sap, which pervaded the intellectual life

of this period of transition from an old order to a new. But Italian architecture had never wholly discarded the classic forms of Roman antiquity. The basilica, in Italy, had never flowered into the rich and complicated cathedrals that were the glory of France; it retained in large measure the simplicity of its origins. Nor, save in Lombardy where Teutonic blood and tradition were strong, did she completely adopt the pointed arch. Everywhere in Italy were fragments of Roman architecture, ruinous and defaced, built often into the habitations of the people, to exert their silent but powerful influence upon builder and artisan. In the South, her contact with the Saracenic and Norman architecture of Sicily, reinforced by the dominant classic tradition of all Southern Italy, with all its memories and relics of that old Greek civilization which had been its glory, kept her from straying far from the path of a development native to her, and sympathetic to the genius of her people. While through Ravenna, by the architectural vestiges of the position it had held as the Western capital of the Byzantine court, and through Venice, by its vast commerce with the Eastern Mediterranean basin, there flowed in upon her the arts of Greece, immensely modified and diluted to be sure, but puissant and beguiling still. In Rome itself is to be reckoned the influence of the early Christian basilicas, those built by the Christians themselves out of materials despoiled from Roman structures; for having lost the skill to cut or carve, the builders collected, from this building and from that, an assortment of columns, capitals, and bases, with fragments of carved entablatures or friezes and pieced them quaintly together. These acts of vandalism resulted in one good at least: the incorporation of these relics of classic art in the fabric of a Christian church preserved them from the early Christian lime kiln, which consumed so much of Grecian beauty and Roman splendor, to take their part later, through the researches of Brunelleschi and Donatello and their successors, in the rehabilitation of the classic tradition, the knotting up of the

thread of classic art snapped by the hoof of the Hun. Nor did Italy ever adopt Mediaeval, or Gothic, architecture as a constructive system. She never understood the principles of Gothic. The old Roman traditions of construction struck roots deep into the conservative Italian soil and were so strong within her that she never paid more than lip service to Gothic architecture, using its forms as the decorative clothing of a structure essentially Italian, Roman, Classic. It was easy then for Italy, after the series of events which brought back to her the knowledge of the art and culture of the classic past, to slip out of the Gothic vestments she wore so awkwardly into the ample robes of the Renaissance in which she found herself so much at ease.

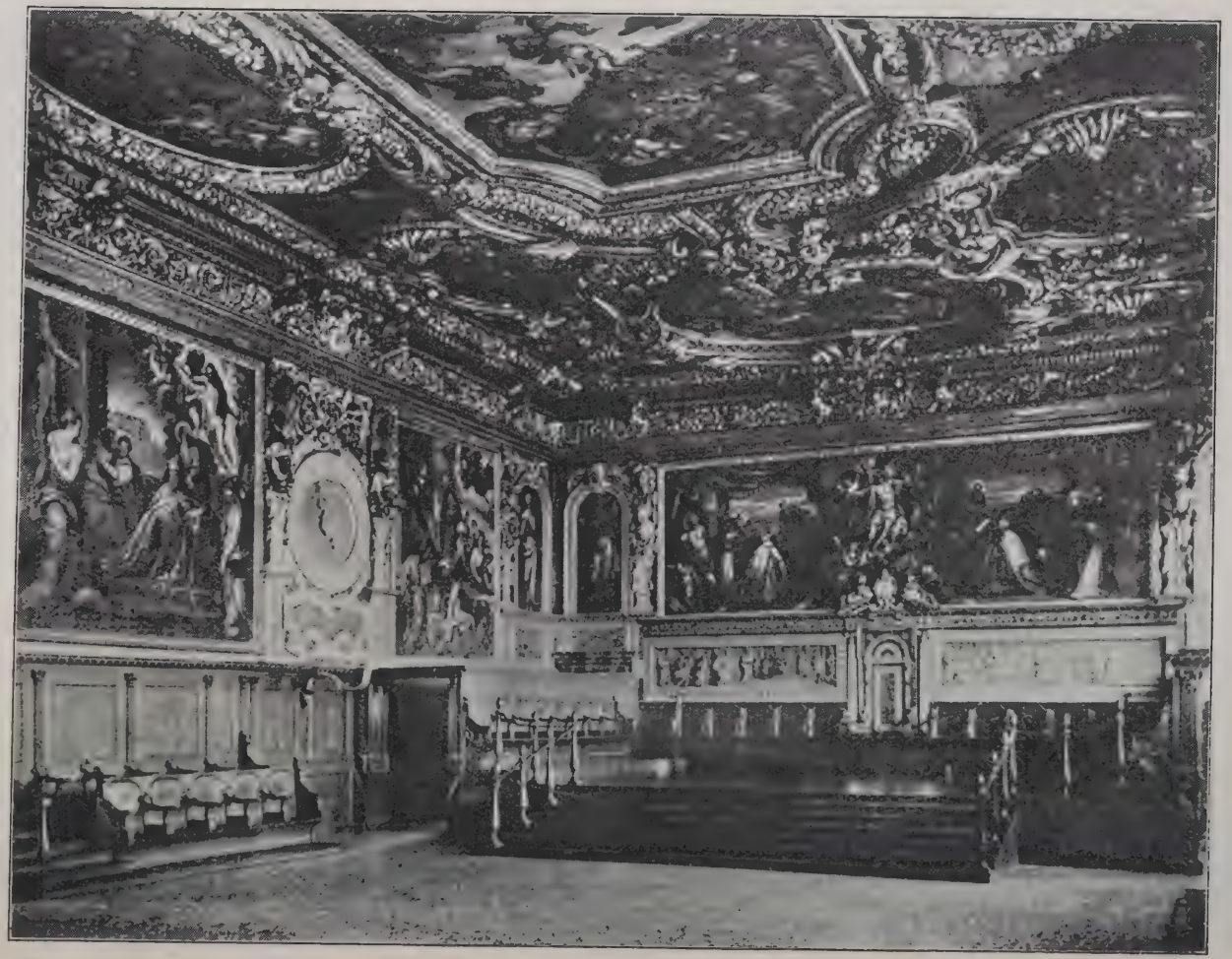
Thus the soil was ploughed and sown, men's horizons widened, their nobler curiosities aroused, until toward the close of the fourteenth century a little man was born in Florence who was to be the true link between the Mediaevalistic art of the fourteenth century, and that we know as the Renaissance of the fifteenth — Filippo Brunelleschi, who built the great dome of the Cathedral of Florence. A deep student and analyst, he was attracted by the remains of Roman architecture with which he came in contact and devoted himself to a profound study of them. It was the influence of his studies which was to sweep his fellow artists and successors into the rising tide of the Classic revival. In his lifetime one of the modern miracles came to pass — the invention of printing, to be the most potent factor in the dissemination of that knowledge for which the world was thirsting and of which it was soon to drink deep; and at almost the same moment, such are the wonders of coincidence, the art of paper making was brought from China. Thirteen years after Brunelleschi's death, that is to say in 1453, the Turks besieged and took Constantinople and numbers of scholars fled to Italy bearing with them copies of many of the ancient authors, Greek, Roman, and Hebrew. As the marvels of these priceless works dawned

upon the Italians there ensued such wild enthusiasm for this new-found culture as never was nor ever will be in this world again. The monasteries of Europe were ransacked for manuscripts lying hidden and neglected through the ignorance and indifference of the monks. Kings, princes, priests, and humanists threw themselves with feverish ardor into the search for these sources of knowledge. Scholars, native and foreign, lectured everywhere and the universities, such as those of Padua and Bologna, were packed to the roof with students from every corner of Europe madly eager to let in this flood of light upon the dark places of the mind. With the recovery of ancient literature the mythology of Greece and Rome became familiar and soon the immortal stories of the pagan gods began to be portrayed in art, strangely commingled now and then with the legends of the Christian Church. After the first force of the flood was spent, the spirit of inquiry and criticism awoke, and anxious groups like those who surrounded Aldus Manutius, the Venetian printer, sifted, examined, and compared the classic texts and gave them to the world purified and corrected. Picture the awe and wondering joy with which an Italian prince took into reverent hands the little volumes of the house of Aldus!

At a time when English noblemen were loutish and ignorant boors, when the French noblesse scorned the ability to read and write as being beneath the dignity of the man of action, the aristocracy of Italy were avidly absorbing all the learning they could come by. To the virile, vivid personalities of the men of Italy, bred of great mixed stocks, of strength and subtlety of mind, strength and beauty of body, strength of soul to adventure and to endure, was added a new thing, the knowledge of the past, the literature of humanism. Learning was no longer the jealously guarded property of a special and privileged class of clerics but was the restored heritage of all men. Man was awakened as by the touch of the finger of the Deity, as God the Father communicates the spark of life to the recumbent Adam in Michael Angelo's great de-

A VENETIAN WATERWAY

PLATE 40



SENATE CHAMBER IN THE DUCAL PALACE, VENICE

sign upon the Sistine vault. As in the Athens of the Golden Age, the ground prepared, the time propitious, a host of great personalities, far exceeding in number the contemporaries of Pericles, emerged to make the period glorious. As in Athens too, the period was brief. Its span is from about 1400 in the youth of Brunelleschi to the death in 1564 of Michael Angelo who had himself seen its decline. And this mental and spiritual re-birth, this pent-up energy of a race released, found expression in a flood of works of such beauty as only Athens in all the long history of art could boast.

II. THE CITY AND THE ARTIST

The conditions of life under which these works were produced must now engage us. Civilized men live in cities, and cities, like men, have a physiognomy which is an index of the character of their citizens as a group, as the face of a man indicates the vigor or weakness, the gravity or frivolity, the truth or falsity of the soul that lives behind the facial mask, moulds the plastic flesh, and looks out through its eyes. This physiognomy of cities is the product of many forces: the character of the people themselves; the influences of situation, such as the comparative isolation of Siena, or the world-wide relations of Venice; social customs; climate; the building materials most readily available. In earlier days the difficulties of communication with distant parts of the country, the lack of swift transportation facilities, with the natural physical barriers of mountain, marsh, and forest, made for political separation and the cultivation of idiosyncrasies, physical, mental, and spiritual. Under the conditions of our modern life, in which science overcomes natural barriers, in which men tend more and more to resemble each other throughout the world, the cities men make tend also toward resemblance; the cities of France must model themselves upon Paris, those of America upon New York or Chicago; but the conditions under which the communities of Italy

developed, fostered in the character of its cities an individuality similar to the intense individualism so characteristic of the men of the Renaissance themselves, and we may trace, throughout the architectural history of each Italian city, a general quality which persists under the superficial changes of style and detail. As in Venice, where the wealth and the sumptuous life of the city is expressed by the richness of the palace fronts; in the Romanesque and Gothic periods by the bold contrast, with simple wall surfaces, of deeply recessed loggias screened with intricate arrangements of column and lace-like tracery thrown across the mass of shadow; by the use of colored marbles, mosaics, and carving; and in the Renaissance period by the retention of a precisely similar arrangement of the main masses of light and shade, but the effect of rich importance attained by great scale, tremendous strength of projection, and by a multiplication of the sculptural, shadow-casting elements of composition which, carried out in one material like Istrian stone, replaced the colored marbles, gold, and mosaic. In Venice the streets are waterways and the movement, ripple and sparkle of water give an animation, a sense of joyous life such as no other city has; lapping the lower foundation courses, throwing over them a mantle of moss, and on still days and calm nights making a mirror wherein beauty is beauty's reflection. So, in the glad and lively setting of her lagoons, a staid severity is not to be looked for in the architecture of Venice. Her position, deliberately chosen for security where the sea waves formed her ramparts, impressed a gay character upon the city, breathing of festivals in the open air, balustrade and window-sill hung with splendid tissues, where lovely ladies leaned to see and smile; of ceremonial and *fête* where the splendors of robe and gown, of furs and gems, vied with the magnificence of gilded ceilings in which the paintings of Veronese and Tintoretto glowed like jewels; of a blithe, splendor loving, open handed people, citizens of a great republic. And though Romanesque and Gothic palaces stand

side by side with those of the Renaissance along the canals of Venice the impression is one — of freedom, of the joy of life.

The Venetians were shrewd merchant princes, great politicians. Shrewd merchants, too, the Florentines, but in character very different from the Venetians, and very different their grave and beautiful city. The Venetian was secure in his lagoons; but the Florentine was brought up to war's alarms, in an atmosphere of internal strife, of the jealousy of faction, of the clash of ambitious clan with clan. Walls and guard towers shut her in. The sun is hot in the valley of the Arno where Florence lies and her streets are narrow and overhung by wide projecting eaves which make them cool and shady. Across these narrow streets the towers of proud families scowled at each other. Every man's house was home and warehouse and fortress and was built like a fortress with thick walls of huge rough stones pierced with grated windows. If the outer doors were forced there were trap-doors in the floor of the *salone* above and store of stone missiles to hurl down upon the heads of the intruders and distract their attention while the hot lead was made ready. Reared in such an atmosphere it is not surprising that the men of Florence were grave, reserved and serious, nor that their city is grave, sombre, austere. But what is amazing is that in this city of faction and strife, of civic jealousy and narrow ambition, there should have existed a deep love of art and literature and the other things of the spirit and that it should have been the very cradle of the Renaissance, the mother or the nurse of some of the greatest artists the world has known — Dante, Giotto, Brunelleschi, Donatello, Sansovino, Lionardo, Michael Angelo — the list is long. The Florentines have been aptly likened to the fickle, factious, intellectual, beauty-loving Athenians. One general character persists, from the bare, stern, stone houses of the Donati faction of the thirteenth century to which Dante belonged, to the great architectural monuments of the Renaissance, such as the

palace we know as the Riccardi but built for the Medici, the Palazzo Strozzi of which the corner stone was laid one spring morning to the sound of flutes, and the vast pile begun by Brunelleschi for Luca Pitti and finished a century later by the Medici he tried to outvie. There is in all of these a military strength of mass, a reserve that is impressive; the whole city seems to be on guard and the tall houses impend watchfully over the narrow streets which the sound of the tocsin in the Torre della Vacca would suffice to fill with armed men, buckling on their swords as they ran. Here and there some miracle of lightness and grace like the Capella Pazzi at Santa Croce, some lovely sculptural detail flung like a tender vine across the rude texture of a rock, or some blue and white lunette of the Robbias, lies like a rare smile on the countenance of a warrior and seems like the swift unveiling of a softer side. Taken as a whole the city speaks of a rather narrow, self-contained life, of much dignity, reserve, refinement, and power.

Rome, on the other hand, breathes a cosmopolitan air appropriate to that capital and metropolis, first of the Roman Empire and then of the world, which finally became the See of St. Peter; it has known all the changes and vicissitudes of architectural history save the passage of the Gothic; its streets are somewhat wider, its open places somewhat more spacious. The artists of all Italy contributed to the sum of Rome's effect. Everywhere, even now, one encounters buildings side by side that raise the ghosts of centuries widely separate — relics of the Augustan Age divided by fifteen hundred years from the work of the Renaissance. Popes and Emperors, Kings and courtesans, adventurers, scholars, all have left some sign of their passage. That it should have something of the ecclesiastical as the Renaissance understood it, is to be expected. But there is here no salient trait as in most Italian cities; it looks like that which it has been — a focus of civilization, the home of a cosmopolitan society.

While Rome exhibits this cosmopolitanism, Naples has, as

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1. THE PAZZI CHAPEL, FLORENCE, Brunelleschi
2. A FLORENTINE STREET

FIFTEEN CENTURIES OF ROMAN ARCHITECTURE
PAGAN—EARLY CHRISTIAN—LATE RENAISSANCE

PLATE 43

a city, no architectural physiognomy soever. The capital of a kingdom weak and intellectually unimportant in its later years at least, it expresses perfectly the emptiness of kingly state unsupported by character. It sits smiling, a pleasant but rather vacuous smile, by the waters of one of the loveliest bays in the world, surrounded by hills and valleys and jutting promontories of ineffable beauty; and so we say Naples is beautiful; but it is the setting we admire — the jewel is paste.

The capitals of princes reflect the taste and character of the various ruling houses which have directed their destinies. If these be trivial the city is trivial. If these be pompous and pretentious so is their city. But republics like Venice and Florence, and like Siena, reflect the character of the citizens themselves and the conditions of their life. And so Siena smiles like her smiling, pleasure-loving people. Isolated on her Tuscan hilltop, girdled to this day by the rosy walls and towers of her defence, the Mediaeval tradition is strongly dominant. The architecture of Florence is of stone, dark brown with age, as that of Venice is marble, rose and cream, and that of Rome is golden travertine; Siena shows how beautiful a brick town can be, running through many shades of rose and grey and yellow, accented and dominated by the mass of the Cathedral in bands of deepest green and golden white marble. The streets are narrow and winding and run steeply down from the triple ridge on which the city clusters; but there is no gloom in them, framed in those buildings of brick and terra cotta in which we may discern the spirit of a simple, gay, and gallant people. There is nothing in this Sienese Gothic of mortification of the spirit; it is light, airy, thoroughly secular and thoroughly delightful. The Renaissance failed to make a deep impression here. But Siena is one of the strongest confirmations of the thesis that the essential structure of Italian buildings is Classic not Gothic, and that it is only the outer vesture which may be called Gothic — for, side by side with Mediaeval façades, and equally at home and equally

A GENOESE PALACE

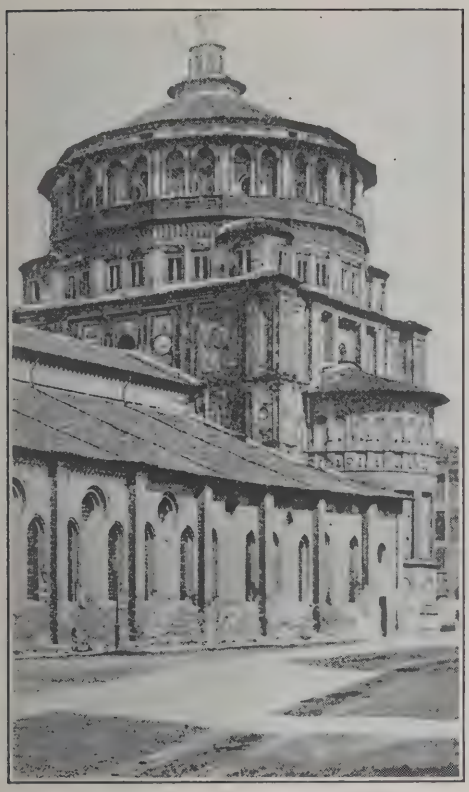
COURT OF THE UNIVERSITY, GENOA

of traders with posts, as Venice had, along the coasts of Asia Minor, in Greece and on the Bosporus. A people of world-wide interests, of far-flung horizons. Her great merchant princes ruled the city, as Venice was ruled by hers. And as Venice was protected from attack by her lagoons, so Genoa had the Alps behind her and the sea at her feet. Thus defended, in security and the wealth that comes of security, Genoa's commercial oligarchy reared palaces conceived and executed in magnificence; built against the steep hillsides, courtyard rising beyond courtyard surrounded by shady loggias and refreshed by the tinkle and drip of fountains, these vast mansions show fronts of princely splendor to the narrow streets. A people never famous for culture, and lacking that love of beauty for its own sake which made the Queen of the Adriatic a greater and a finer city.

There is another and a most potent factor to be reckoned with in the creation of architectural character. Cities may be timid or enterprising, independent or servile, rich or poor, intelligent or stupid, princes may be powerful, ambitious, splendor-loving. But without the artist to stamp his character or that of citizen or sovereign upon the buildings which give a city that which we call its physiognomy, the riches and the pride, the taste and the mental vigor, would fail of celebration. The history of art is full of instances of the determining influence one man may have upon the character of the art of his own and many succeeding generations. The artist of the Renaissance was, in common with his fellow citizens, the product of a complex and ardent civilization, in which all elements tended toward the creation of individualism, the development of salient personalities, men of original force. To continue the figure we have already used, men were awakening with minds refreshed by the long sleep of the Middle Age (for thought was not encouraged by the dominant power of that age, the Church) and were adventuring forth into the dawn with the glories of the day half guessed and all its treasures of beauty and knowledge. To them were revealed

the old, but by them newly found beauties of the antique world, the serenity of Greek poetry and sculpture, the majesty of Roman architecture and the wealth and ordered splendor of its details, much of it lying open to him who ran, but for which the preceding generations had lacked the seeing eye, lacked the intellectual curiosity to analyze and apply to the life and the problems of life of their own day.

It was the custom in the early days of the Renaissance, and indeed to a great extent throughout the period, to apprentice a promising boy who had a vocation for art to a goldsmith. The art of the goldsmith was a very inclusive affair; it embraced besides the kind of work we moderns would associate with the craft, modelling and color and the arts of design in general. A lad entering the workshop or *bottega* of a master of the craft would learn to draw, to grind colors, to paint, to model in wax and clay, to set gems, to work in gold and silver and enamel, to master the technique of *repoussé* and the secrets of bronze casting and chasing, to carve wood and inlay it, decorate and gild it, and learn the principles of mechanics and the elements of architecture. The lines of specialization so sharply drawn now-a-days were quite unknown. A man became with such an equipment an all-round, thoroughly equipped artist. Inevitably his principal bent declared itself later and he devoted himself more or less closely to one or more of the fields of artistic creation. Some men, as did Benvenuto Cellini, remained essentially goldsmiths, with excursions into the field of sculpture. Others, like Michael Angelo, became great sculptors; and in his case, a great painter and a great architect as well; Raphael became primarily a great painter who upon occasion executed distinguished works of architecture. The versatility of the Italian artist of the Renaissance is one of the marked characteristics of the period. And to this kind of training with its tendency toward the pictorial, toward wealth of invention in detail and weakness on the constructive side is indubitably due that lack of a sense of organic structure displayed by Italian architects,



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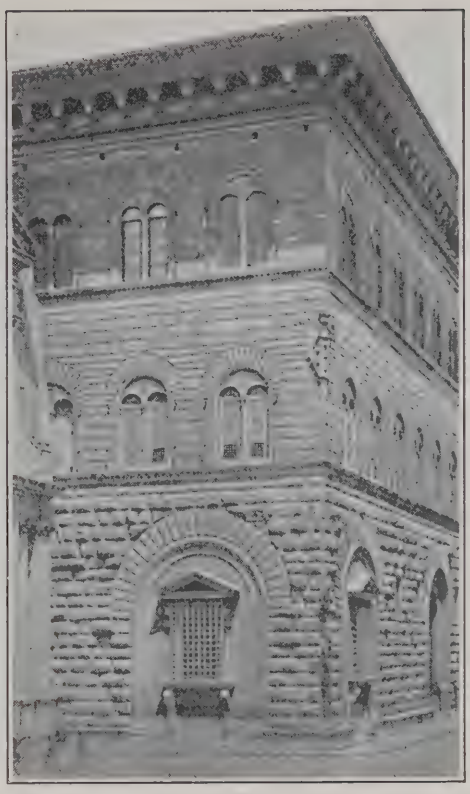

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1. S. MARIA DELLE GRAZIE, MILAN, Bramante
2. PALAZZO RICCARDI, FLORENCE, Michelozzi
3. PALAZZO FARNESE, ROME, Various Architects

BRAMANTE LAZZARI, ARCHITECT

FILIPPO BRUNELLESCHI, ARCHITECT AND SCULPTOR

all the more remarkable in the direct descendants of that race of great constructors, the Romans. That sense was to be supplied, in the development of Renaissance architecture, by the French, as we shall see. Many a charming church façade in Italy is a mere lovely mask which conceals and completely fails to express the organism of the building behind it. No one would guess from the façade of the Farnese Palace, in which three stories of windows are carried across and around the building, that there is a vast room occupying the two upper stories on the left side of the principal front. There is no indication of such an important apartment on the exterior. In short, the Italians as a rule failed to make the plans and the elevations of their buildings mutually expressive. The art of architecture ran far ahead of the science of architecture. But it was not a scientific age; it was an age of discovery and experiment and adventure; and if a façade were beautiful in itself, it did not question its articulation with the high nave and low aisles of the church behind it. Such a point of view does not satisfy the thoughtful architect of the present day, but the *naïveté* of the Renaissance questioned it no more than it questioned the gorgeous brocades and velvets of the current mode in which the painters clothed the simple and most sacred personages of the Christian faith. It is in this *naïveté* that much of the charm of the early Renaissance resides, as it does in all transitional periods. We find elements quite out of scale with each other, and badly proportioned in themselves, combined with so much gusto, such a sense of the dramatic possibilities in the arrangement of light and shade, that we are delighted as by the stammering utterance of some charming child; and such wealth of fancy, such tenderness in the treatment of leaf and flower, fruit and tendril, such manifest delight in the exercise of new-found faculties, that we are constrained to admiration and to the abeyance of the critical sense.

III. SOME ITALIAN ARTISTS

That which is of importance for the reader who is primarily interested in architecture as one of the most important fruits of human genius, is an apprehension of the general character and spirit of the work done in a given period, some idea of the men who produced it, of their friends and patrons, and how and where they lived and walked and played. In the Middle Ages, in all too many instances, the identity of the directing mind in the making of a great building is unknown, and that of the many artists and artizans who worked with and for him is lost in that of the guilds or companies of builders of which they were members; but the personality of the artists of the Renaissance is well known to us; this is one of the signs of the times, this emergence of the man from the mob, a sign of the increased sense of a man's worth in the world.

Of Filippo Brunelleschi we have already spoken as the man who blazed the path which led from Gothic architecture to the revival of the Classic. He was small and insignificant in appearance and of his character, accounts vary; in some he is described as benign and amiable, facetious in conversation, quick at repartee, fond of debate, particularly on religious subjects, and as always ready to give up his own time to the needs of his friends; in others he is accused of being a rather contriving sort of little man, and very contentious; this may have gained currency from the fact that others were constantly trying to supplant him in his employments, and it took so much of his time merely to hold his own that the progress of his work suffered, and many projects upon which he was engaged were not finished in his lifetime.

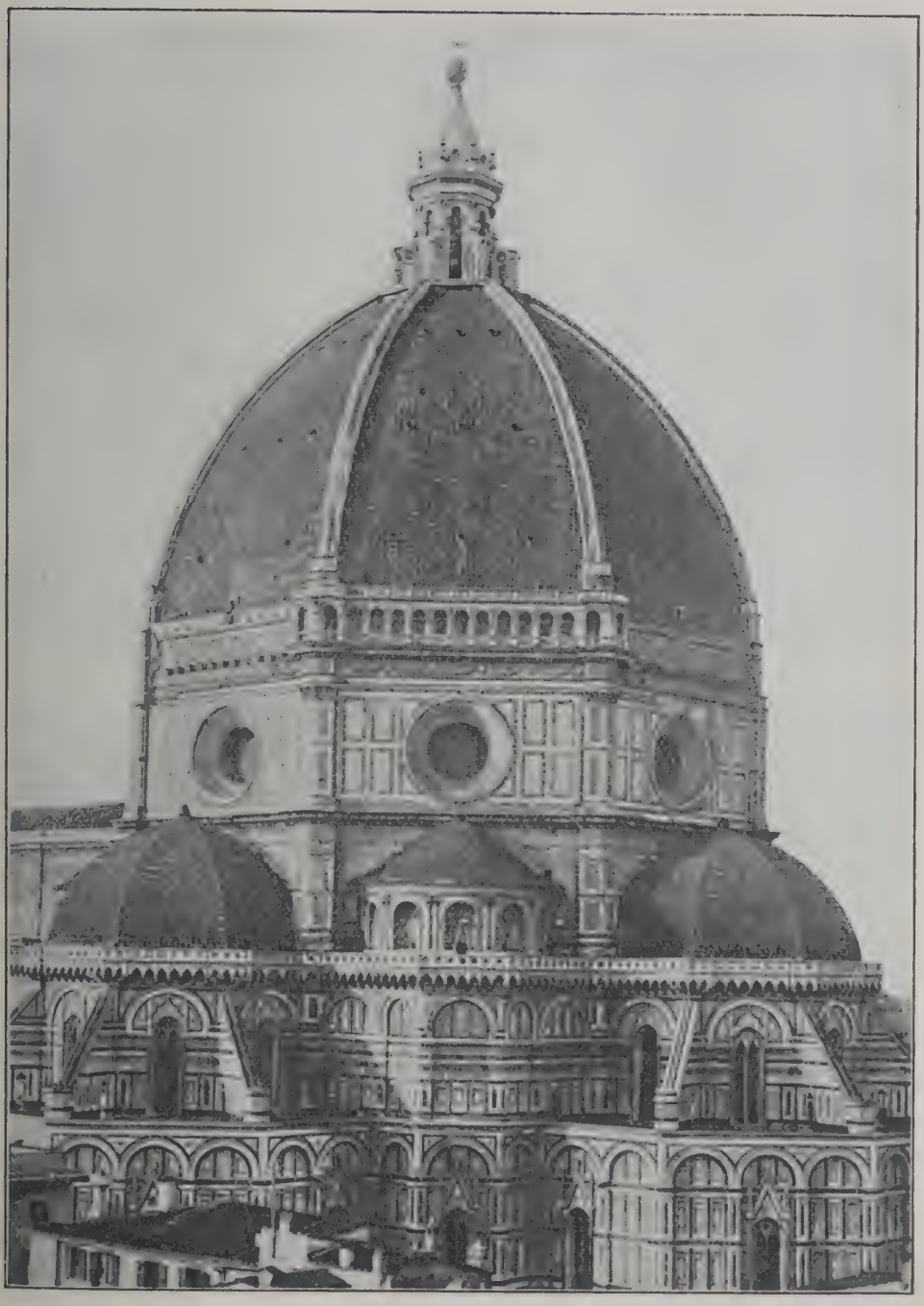
He began his artistic life as a sculptor, having declined to follow the profession of his father, who was a notary, or of his grandfather, a physician. He was first apprenticed to a goldsmith; but his talent as a sculptor developed so rapidly that he determined to devote himself to that branch of the

business — for the practice of art was, in that day, rated a business or trade, not a profession — helped thereto no doubt by the close friendship he formed with the young Donatello. When he came to young manhood a competition was held to decide who should execute the bronze doors of the Baptistery of Florence; and Vasari would have us believe that Brunelleschi, recognizing the superior merit of Lorenzo Ghiberti's model, urged that Ghiberti be appointed. But other accounts suggest that his disappointment on not being chosen was so bitter that he forswore sculpture, sold a little farm he had at Settignano, and with his faithful friend Donatello took the road for Rome. There the two young men devoted themselves passionately to the study of the monuments of Roman antiquity. They measured and drew the buildings; and because they dug about the ruins, they were looked upon as seekers of hidden treasure — as indeed they were. It is reported that Brunelleschi had always, from his early days in Florence, cherished the secret ambition to complete the Duomo, the cathedral church of S. Maria del Fiore, begun by Arnolfo, and then lacking the dome over the crossing of nave and transepts, and that he bent all his studies in Rome to that end — both laudable and clever, if true. Be that as it may, he did investigate the constructive methods of the Romans very thoroughly and did not devote himself entirely to a study of mere externals. In 1407 he went back to Florence where the question of completing the Duomo was being agitated. His ideas were laughed at, and he left Florence and returned twice before he was able to impress the Syndics with his competence. These absences would seem to have been a part of his strategy to make his services more highly valued than they might have been had he hung about Florence. When at last he was appointed, Ghiberti, who had no architectural training comparable with his, was associated with him, with equal authority, and higher pay. Poor Filippo, in despair, cast about for ways to get rid of his unwelcome associate and, at last, by feigning illness at a

critical emergency in the work with which Lorenzo showed himself helpless to deal, he exposed Ghiberti's incompetence and was appointed sole architect for life. The history of his relations with Ghiberti seems to indicate a certain ill feeling between the men which does not bear out Vasari's tale of Brunelleschi's noble act of renunciation in the matter of the doors. Nor another story, that when Brunelleschi was once asked what the best thing was that Ghiberti had ever done, he replied that it was when the latter sold a certain farm which had given him a good deal of trouble. These faint echoes of old bickerings seem to bring those dim days nearer.

Brunelleschi's services were much in demand outside of Florence as well as at home. The Marquis of Mantua begged the Signoria of Florence that he might be sent to his city; there he designed dams to control the waters of the Po. At Pisa he was wanted to build fortifications. For Cosimo de' Medici he made designs for the palace Cosimo proposed to build, on a scale of such magnificence that Cosimo, fearing the envy of the Florentines, declined his project; Brunelleschi is said to have destroyed his model in a rage, and this hardly sounds like the calm man of dispassionate judgment Vasari depicts. At all events, Cosimo gave the work to his favorite architect, the constant companion who later accompanied him into exile in Venice, Michelozzo Michelozzi; and the splendid house he built stands like a great rock in Florence today, known as the Riccardi Palace from its later owners.

There was a rich banker and merchant in Florence named Luca Pitti, who sought to rival the growing importance of the Medici family; this man commissioned Brunelleschi to build him a palace such as never had been seen. This stupendous pile was never completed by Pitti nor by his heirs, and was finally bought, after the Medici had become Dukes of Florence, by Leonora of Toledo, the Duchess of the later Cosimo, as more worthy of their ducal importance than the old residence. She completed it, added the two wings and



THE DOME OF THE CATHEDRAL, FLORENCE, Brunelleschi

PLATE 48

LEO BATTISTA ALBERTI, UNIVERSAL GENIUS

BALDASSARE PERUZZI, ARCHITECT AND PAINTER

built the beautiful Boboli gardens which cover the hillside behind it — one of the notable gardens of the Renaissance.

Brunelleschi was buried, in 1446, in the Cathedral his genius had glorified. Some of his work is cold and repellant, but the Capella Pazzi and the Ospedale degli Innocenti are not merely graceful and beautiful but amazing works of genius; for Brunelleschi, be it remembered, was a pioneer; a man less able than he would have copied the architecture of Rome, but his receptive and flexible mind absorbed the spirit of the antique and evolved original works conceived in that spirit.

There is a story about Brunelleschi and Donatello which indicates the simplicity of the artists and their ways in 1400 or thereabouts. When they were young fellows, Donatello made a crucifix and showed it to his friend who criticized the figure as being that of a peasant not of a Christ, to which Donatello retorted with the early Italian equivalent for: Do one yourself then. Brunelleschi said nothing, but some time later when his chum had forgotten all about it, he proposed that they dine together at Brunelleschi's workshop. They bought their dinner as they went along, stopping at one little shop after another for eggs and vegetables and wine — just such little shops as we pass today in the dusky Borgo SS. Apostoli — and Brunelleschi easily invented a pretext for sending Donatello on ahead with the things they had bought. Arrived at the workshop, the first thing which met the sculptor's eye was a magnificent crucifix Brunelleschi had made in secret. Donatello, in amazement, dropped the corners of his apron and smashed the eggs. The little tale is eloquent of all the simplicity of early Florentine days, when two of the greatest artists of the Renaissance, two simple eager boys, went about the streets in their working aprons buying their dinner. Customs and times were to change and the social status and habits of the artists were to change with them until Raphael went about in Rome like a young prince, accompanied by a veritable court of assistants and servants.

Like a prince among men was Leo Battista Alberti, born

in 1404 of a noble family — an origin by no means usual for the artists of the Renaissance. He was a kind of Admirable Crichton; he could jump his own height, subdue the most fiery horses by his mere touch, throw a coin farther and more accurately, and hit a mark with arrows better than anyone else. He was given the complete education of a gentleman of those days, which included not only complete proficiency in bodily sports and exercises but all the learning of the time. While it was a precocious age, nevertheless the ground a student covered was very restricted compared with that of the present day; so that we are not to be surprised at his early mastery of Greek and Latin, philosophy, and mathematics. He wrote many volumes on architecture and the kindred arts and seems to have been a kind of dilettante like the cultivated gentleman of Colonial days in America, in whose scholarship, as in that of Thomas Jefferson and Dr. Thornton, a real knowledge of architecture and the sister arts was to be taken for granted. He went to Rome, where his personality and gifts attracted the attention of Pope Nicholas V, and from Rome journeyed to Rimini where he designed for the wicked Sigismondo Malatesta a new façade for his church of S. Francesco. Giovanni Rucellai asked him for a design for a new front for S. Maria Novella in Florence; and he also designed the palace of the Rucellai family for the Cosimo of the name. Another patron was Lodovico Gonzaga, Marquis of Mantua. It is, of course, difficult to disentangle truth from legend and particularly from rhetoric, but, piecing together an anecdote here and a statement there, a practicing architect gleans the impression that Alberti was not fully qualified to construct the buildings he designed, but that he merely made drawings which other men, perhaps humbler but more practical, executed. He was a painter also; in fact his studies and writings on painting preceded those on architecture. In architectural design he profited of course by the impetus given the study of the Classic by Brunelleschi, who was a man of twenty-seven when Alberti was born, so that by the time

the latter began architectural work the former was in the full maturity of his powers with numerous works in the new manner already executed or under way. Nevertheless, Leo Battista Alberti was one of the most brilliant of the many-sided geniuses of the Renaissance.

Two years before Brunelleschi, the pioneer and innovator, died, that is to say in 1444, was born the man in whom the finest qualities of Renaissance architecture were to be summed up — Bramante Lazzari of Urbino. He died at the age of seventy; Brunelleschi was about twenty-five when he went to Rome to study architecture, about 1401–2; Bramante was at the height of his artistic powers at about the year 1500; so that only one hundred years separates the infancy of Renaissance architecture from its maturity — only a part of the span of life of but two men.

Bramante's parents were very poor. He was apprenticed to Andrea Mantegna, the painter so beloved of Isabella d'Este, Marchioness of Mantua, and for so many years attached to the house of Gonzaga; but he early became interested in architecture and wandered away from Urbino up into Lombardy, going from city to city doing all sorts of journeyman work, and one may suppose, filling his mind with impressions of the architecture in which Lombardy, even in those days, was rich. We know he arrived at Milan. All the early part of his life is obscure and the accounts are confusing. The first date by which we may guide ourselves is 1492 about which pivots his work on S. Maria delle Grazie in Milan, when he was already a man of forty-eight; the second is 1495 which marks the beginning of the beautiful offices of the Chancellor of the Roman Church, the Palazzo della Cancellaria, in Rome; the third is the year of Lodovico Sforza's fall from power in 1499 when Lionardo da Vinci and Bramante are both said to have fled Milan in consequence of their patron's reverse. According to Vasari he left Milan because he was inspired to go to Rome to study architecture! A man of fifty-five, a man who had designed the exquisite Cancellaria, a work exhibit-

ing not merely extraordinary refinement and invention but a profound acquaintance with classic forms! He never learned so much of the classic spirit in Lombardy where the Gothic yielded to it so slowly; and we are obliged to conclude that he had made more than one journey to Rome and to Florence long before he emerges from the obscurity of the record as the author of S. Maria delle Grazie.

It is also entirely probable that Lionardo da Vinci, the marvel of the Renaissance, the greatest ornament of the court of Milan, had a part in shaping the bent of his brother artist; for Bramante's work is full of the most refined subtleties of detail and it is quite within the possibilities that his thoughts may have been turned in that direction by the arch-master of subtlety, Lionardo.

Accounts agree that Bramante made, at some time, as complete a study of Roman remains as Brunelleschi, not only in Rome itself but pushing his researches far out through the Roman Campagna, to Hadrian's Villa, to Tivoli and to the Alban Hills. A close study of Bramante's architecture gives rise to the speculation that he must have come into close contact with Greek work, Greek of the best period, as well as with the best of Gothic — for only in Greek and in Gothic do we find the exquisite modulations of mouldings and of spacial relations which distinguish the work of this master among the architects of the classic revival.

When he is first heard of in Rome it is as the designer of the beautiful little two-storied cloister of S. Maria della Pace, an accomplishment which gave him high repute. Naturally the Papal Court took note of such ability; and we soon find him employed to design the court of the Belvedere in the Vatican, a court subsequently cut in two and so ruined by Pope Sixtus V. When Giuliano delle Rovere ascended St. Peter's chair as Julius II, Bramante's talents found full employment. Honors accumulated. He was made Clerk to the Signet and given other offices whose emoluments enabled him to live in a very splendid manner. It was he who induced his nephew,

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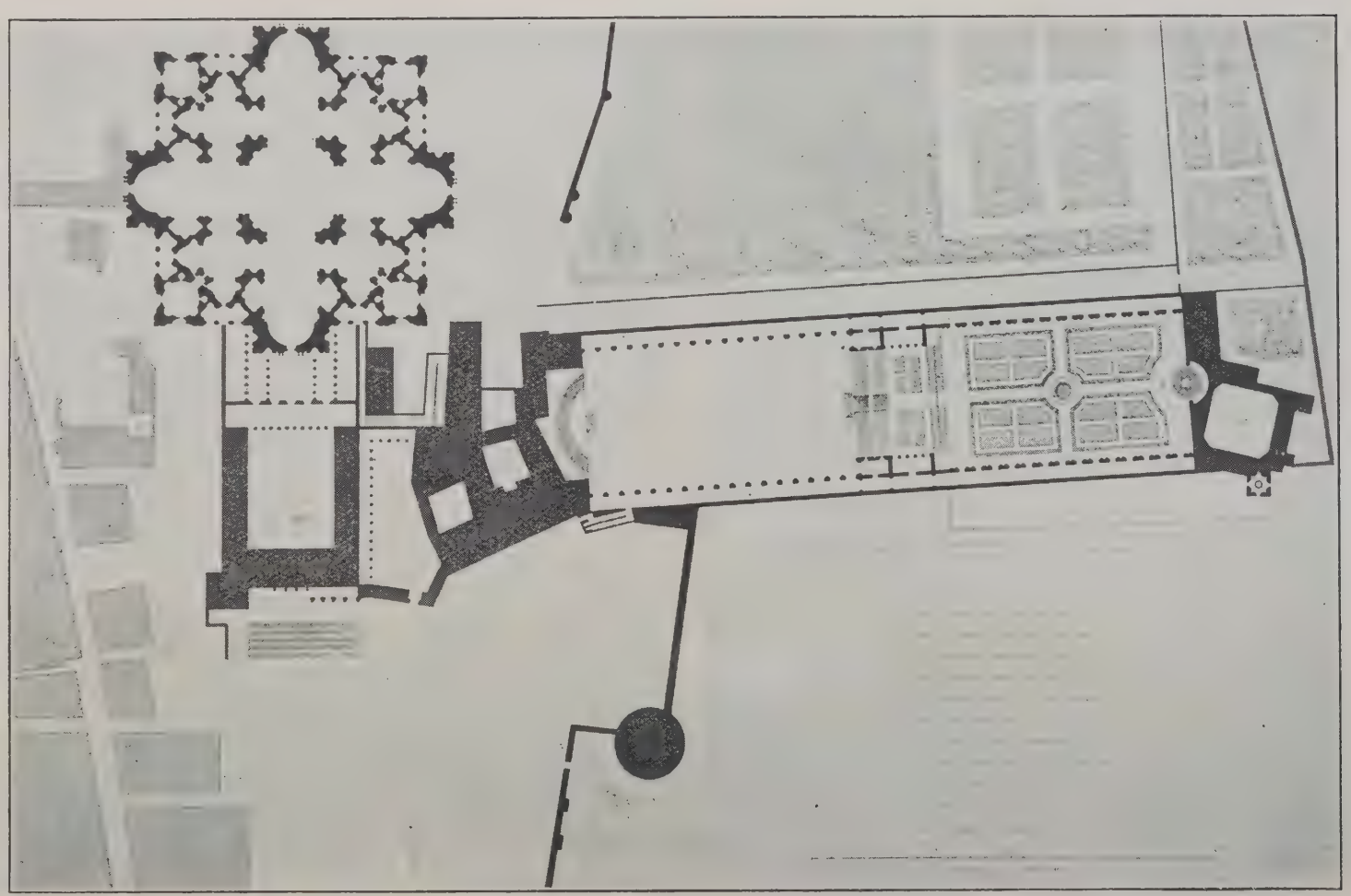
1. PALAZZO MASSIMI, ROME, Peruzzi
2. THE CANCELLERIA, ROME, Bramante



BRAMANTE'S PLAN FOR ST. PETER'S AND THE COURT OF THE BELVEDERE IN THE VATICAN

the young Raphael, to settle in Rome, and it was he who provided the rising genius with the architectural backgrounds and accessories of many of his paintings. Bramante was cheerful and amiable, a most agreeable companion, a lover of music, and a skilled performer upon the lyre. Indeed, such accomplishments, with a gift for, or knowledge of, poetry, were sure passports to that favor of prince or patron upon which the artist of the Renaissance depended.

The crowning glory of his career was his design for the new church of St. Peter in Rome, to be the largest church in Christendom, to replace the old basilica then occupying the site. He devised for it a wonderful plan, from which lesser men who took up the work after his death had the presumption to depart, to the lasting detriment of the building. The nave was lengthened and other changes made which lessen the effect of the structure to a lamentable degree; it is only from the rear, where the great dome by Michael Angelo rises without the intervening masses which hide it from the front, that its full majesty is realized. If St. Peter's had been entirely carried out by Bramante, if, instead of the coarse vulgarity it now exhibits, he had lived to throw over his mighty masses the golden fabric of his pure and subtle style, it would have been doubtless the most beautiful classic edifice in the world. Its faults of scale and exaggeration are those of others.

Upon Bramante's death, this man who began life as a poor boy in Urbino was buried in the fane he had so nobly conceived, followed to the grave by the Papal court and by a great concourse of all the artists in Rome.

Akin to Bramante in the refinement and character of his architecture, standing on a plane but little, if any, lower than his, is Baldassare Peruzzi, born in Volterra, that old Etruscan stronghold, of Florentine parents who removed to Siena where the boy Baldassare took to frequenting the workshops of the goldsmiths and other craftsmen, probably, if not duly apprenticed to one of them, to pick up an odd job, to carry

a package to a customer; and somehow picked up a knowledge of painting and went off to Rome to seek his fortune, with his friend the young painter Piero da Volterra — Rome, the goal of so many ambitious young men. Whether he was provided with letters of introduction to Agostino Chigi, the rich and powerful Sienese banker, or whether, as the custom of the day was, he placed himself under the protection of this patron, history does not relate. But we know that the simple, modest young fellow won to an intimate friendship with the banker, who so provided for him that he had the leisure to study architecture. How well he repaid his patron's generosity is to be seen in the building known as the Villa Farnesina, famous also for the paintings with which he and Raphael adorned it. His growing reputation brought him an invitation to cross the Apennines to Bologna to design a new façade for the church of S. Petronio, a work never executed. Returning to Rome, he was employed by Pope Leo X of the Medici family, and was one of the many architects who were, in succession, placed in charge of the slowly rising fabric of St. Peter's. Like so many architects of the time, he made designs for, and arranged, important pageants and ceremonials, such as the coronation of Pope Clement VII in 1524. Three years later, when the Spaniards took Rome and sacked it, Peruzzi was made prisoner by a marauding band of soldiers, who, thinking for some reason he had money, tortured him to make him disgorge. The good, simple fellow never had any money; he never received the worth of his services and he lived and died a poor man. But, little as he had of worldly goods, the Spaniards robbed him of it and when he finally escaped out of their hands and got himself to Siena it was almost literally in his shirt. The Republic took him into its service and appointed him superintendent of the city's fortifications. When peace was restored he went back to Rome, was reëstablished in all his old appointments, and it was after this time that he built his masterpiece, the Palazzo Massimi. Just when he designed the charming buildings in Siena as-

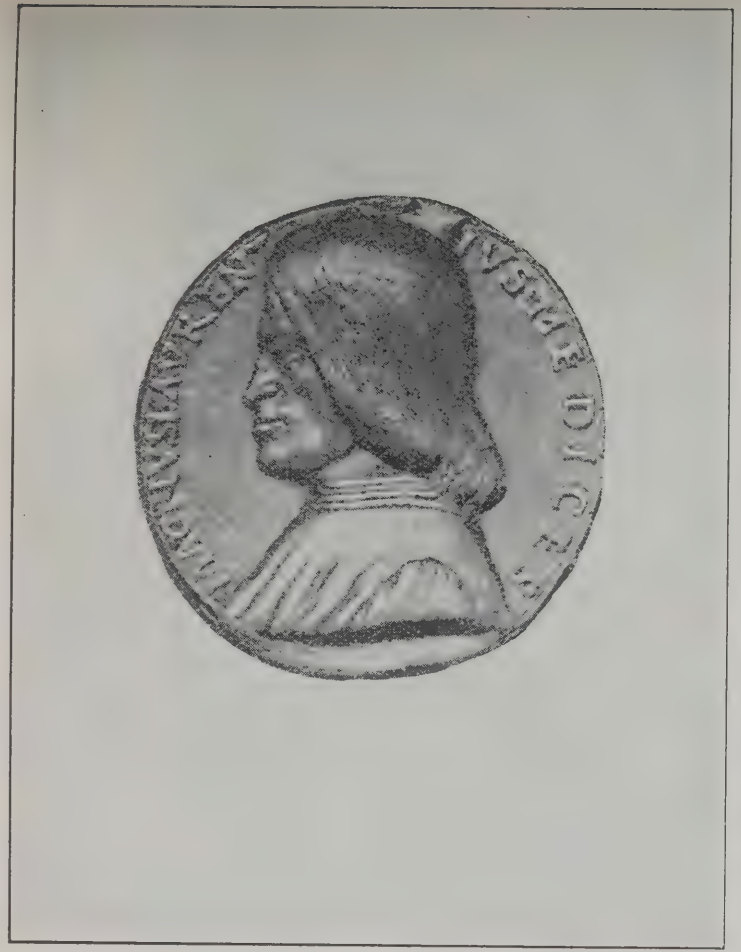
cribed to him, in which he shows himself as supremely competent to deal with the local material, brick, as he was with the Roman travertine, is not clear; perhaps in the years just following the sack of Rome. Peruzzi died at the comparatively early age of fifty-five, poor, but honored by a place in the very first rank of Italian architects.

IV. CONDITIONS AND CONTRASTS MICHAEL ANGELO

It will perhaps have been noted how these artists moved about from place to place — Bramante leaving Urbino to wander through Lombardy, leaving Milan for Rome, Rome for Milan again and for Bologna, and back to Rome — Raphael, his nephew, going to Florence from his father's house in Urbino, and finally to Rome — Lionardo da Vinci gravitating between Milan and Florence — Michael Angelo, now in Rome, now in Florence — Sansovino leaving Florence and embracing Venetian citizenship; and Cellini moving constantly between Rome and Venice and Florence and Paris — two journeys to Paris. And such journeys! For us in the America of the present, to whom even the modern facilities of travel in France and Italy seem primitive, it is impossible to conceive of the hardship and adventure the men and women of the Renaissance encountered. The roads were by no means safe, infested by robbers, or, what was as bad, by wandering units of mercenary soldiery, the bane and pest of a country torn by constant petty wars conducted by paid captains who sold their sword to the highest bidder. The inns were few and bad and dirty, the inn-keepers as like as not the confederates of the bandits. Travel was by horseback. Along the course of such streams as the Po and the Brenta it was possible to get one's self and horse and the sumpter mule with the extra baggage aboard a barge and rest a little from the rigors of the road. The nobility travelled with immense retinues; and if great ladies like Isabella d'Este and Elis-

abetta Gonzaga had to complain of the trials of the journeys for which they seem, with a strange fatality, to have chosen the bitterest months of winter, we may imagine what they must have been to the minor members of the suite and to the servants; single travellers must needs attach themselves to the train of some travelling nobleman or to some company of merchants making common cause for security. When two simple young fellows like Brunelleschi and Donatello took the road, we may suppose their poverty was their protection. Benvenuto Cellini travelled in breastplate and head-piece, armed with a little gun of his own making, and his assistants were armed appropriately to their degree. The perils he faced, of rivers in flood, of sudden storms on mountain lakes, of mountain snows, of losing the road and passing the wild night in the open, were the common lot of all travellers. One can but marvel that anyone stirred from home.

Conditions varied of course from generation to generation, not only as to travel but as to the circumstances of life in general. Even in very early times, when London lanes and streets were bottomless quagmires, the little cities of Italy were paved from house to house with the broad and solid slabs of stone which bespoke the splendid Roman tradition. The comfort and luxury of Italian houses, their generous scale, their stately, airy height of ceiling, were revelations to the visitor, private or ambassadorial, from the countries to the north. Nor were the material comforts all. In all the amenities of life the Italians were far in advance of the rest of Europe. Reference has been made to the culture of the Italian aristocracy; this culture was not confined to the men but was shared in very large measure by the women, who took as keen and intelligent an interest as their husbands and fathers in pictures, buildings, statuary, books, music, and all the thousand things that contribute to well ordered and well rounded life. A talent for music, art, or poetry, would carry a lad of the humblest origin to the council table of the princes of the world. All grades of Italian society were permeated with



LORENZO DEI MEDICI

MICHAEL ANGELO BUONAROTTI

PLATE 52

IN THE MEDICI CHAPEL, FLORENCE, Michael Angelo

PLATE 53

this passion for culture; and poet, musician, architect, painter, sculptor, addressed an audience intelligent, instructed, and sympathetic. It was a favorite custom for men and women to gather, perhaps on some pleasant morning in a shady corner of some princely garden, or in the evening in the great hall of the palace, before the fire if it were winter, or in some cool and spacious loggia if it were summer, and there, in the true democracy that rules the domain of arts and letters, prince and peasant-born would discuss some topic bearing upon life or literature or art. The famous *Cortigiano* or "Courtier," by Baldassare Castiglione, feigns to be the record of such a gathering of cultivated men and women at the ducal court of Urbino. But Italian society was full of contrasts; and side by side with the extreme of amenity was the extreme of savage cruelty, vice, wickedness. While the enlightened ladies and gentlemen of Ferrara discussed gentle and humane topics in the airy painted halls, deep in the bowels of the Castello below the waters of the moat, dismal prisoners clanked their rusty chains. Private and public virtue in the Renaissance period ranged from the simple sobriety of the early Florentine Republic to the shameless vice and astounding luxury of the Papal court of the Borgia. These contrasts are not the contrasts of periods of simplicity and virtue with periods of wickedness and license; these things existed side by side in all periods.

The rise of the house of Medici in Florence from simple and prudent beginnings; great works undertaken by which the city benefited; concealment of their growing wealth; to the growth of power, the intellectual passion of the house as exhibited by Lorenzo the Magnificent, the archetype of the patron of art and artists; his more or less conscious and deliberate debauchery of the Republic that he might gain and keep political ascendancy; to the gradual decay of the house, and its deliquescence from the virility of the first Medici to the feeble scions of illegitimate birth of its later years, is typical of a general decline from the halcyon days of the Early

Renaissance to the hot and fetid air of the sixteenth century. With the flood of antique learning that poured in upon Italy came flotsam and jetsam of vicious literature that found lodgment here and there and flourished and did much to debase Italian life. The vastly increased wealth of Italy, due to the fact that the Italians were the bankers of all Europe, had inevitably brought great luxury in its train — and the relaxed moral fibre that seems to be the fruit of luxury — and which prevailed despite the sumptuary laws against display passed by the Republics of Florence and Venice. The debased morals of the princes of the Church brought about the Reformation in the countries of the North, the answer to which in the South was the Counter-Reformation, and the establishment of the Inquisition first in Spain and later in Italy — all that which is known as the Catholic Reaction by which all liberal thought, culture and intellectual independence were stifled and extinguished.

It is of the greatest figure of the art of the Renaissance we have now to speak, of him who stands aloft in this *débâcle* of society like a mighty rock left by an ebbing tide, mournful in his isolation, gazing with sad and bitter eyes at a decaying world — Michael Angelo Buonarotti. Born in 1475 of an excellent family, in the heyday of Renaissance life and culture, he lived to see his beloved birthplace, Florence, enslaved by the Medici whom a strange twist of fate made his life-long patrons, and the deterioration of Italian life, moral, political, and artistic.

Michael Angelo was a pupil of Domenico Ghirlandajo until he was sixteen, when his latent spirit of independence declared itself and he quarreled with his master; thenceforward he went his way untaught save by his own studies of the antique fragments which had been installed by Lorenzo de' Medici in the gardens of S. Marco and where the young Buonarotti had secured the right to work and study. He made such an impression upon Lorenzo that he was taken into the household, and his companions until the death of

Lorenzo were such men as Pico della Mirandola, Ficino, Poliziano, and the Magnifico himself — four of the choicest spirits of the Renaissance, and the leaders of a circle in which talk at table and in hall and garden was of Greek philosophy, poetry, and art, and of all that made Rome great. This pagan learning he was to correct and balance by the influence of Savonarola, that inspired monk who filled the Duomo of Florence with vast crowds whom he swayed by his eloquence as the wind bends the wheat. Such were the influences, during the most impressionable years of life, which helped to mould the personality that was to dominate the world of art.

Lorenzo died. His successor Piero was banished in 1494 for his base treachery in delivering the Tuscan cities into the hands of the French invader, Charles VIII, and a new Republic was declared. One so closely identified with the Medici as Michael Angelo was hardly safe in Florence, so he slipped away to Bologna, where, in the palace of the Aldovrandini, he worked, and waited for the skies to clear. He returned to Florence and in 1496 he went to Rome. Cardinal Riario had purchased a "Sleeping Cupid," thought to be an antique but which proved to be the work of this young Florentine genius; and it was in reference to the price of this work, and in the natural hopes raised in the breast of a sculptor of twenty-one by such a mistake of ascription in his favor, that he went to the city which was to be the scene of his chief labors and greatest triumphs. Five years later we find him again in Florence, where, during the next four years, he executed his famous figure of David, two Madonnas in relief, and a cartoon for a painting to occupy a wall, opposite one to be done by Lionardo da Vinci, in the Council Chamber of the Palazzo Vecchio, the seat of Florentine government. This drawing, which has long since disappeared together with Lionardo's, and neither of which, alas, were ever carried out in paint, proved to be, more than the David, the turning point in his career, in the sense that it established him once

for all, in the view of every artist and every patron of art in Italy, at the head of the artistic confraternity.

He was recalled to Rome by Julius II in 1505 and set to work upon the vast mausoleum, crowded with sculpture, the aging Pope intended to place in the old Basilica of St. Peter. But the church was too small for the tomb, so Julius decreed a new St. Peter's big enough to contain it. Of this grandiose project only the mighty Moses and two figures of slaves were ever brought to completion and the work dragged on through many weary years. In the meantime the new church went on under Bramante, who is reported to have so prejudiced the Pope against Michael Angelo that Julius treated him with contumely, whereupon the fiery sculptor sold all he had in Rome and shook the dust of the city from his feet, swearing never to return. This brought the equally hot-headed Pope to his senses, for he had no intention of losing his Angelo, and they were reconciled at Perugia. But, upon the artist's return to Rome in 1508, instead of proceeding with the tomb, Julius insisted upon his painting the vaulted ceiling of the Sistine Chapel, the private chapel of the Popes. At first he demurred, but, becoming interested in the problem, he finished the gigantic task in four years, urged on by the terrible old Pontiff with threats to have him thrown from the scaffold if he did not work more rapidly.

Upon the death of Julius, a Medici in the person of Leo X succeeded him and sent Angelo back to Florence to build him a new front for the church of S. Lorenzo, the family church of the Medici and upon which they had always lavished their bounty. Years were wasted upon this project that came to nothing in the end. Another member of the Medici family, Giulio, then Cardinal, and afterward Pope as Clement VII, had conceived the idea of building a new sacristy for the church, in which would be placed the tombs of the founder of the house, Cosimo the "Father of his Country"; Lorenzo the Magnificent; Leo X; Clement, himself; and the Dukes of Nemours and Urbino, the two latter per-

fectly insignificant individuals. When Clement VII assumed the tiara he commanded Angelo to undertake this work; and he reluctantly did so. The whole scheme was never carried out, but the tombs of the two Dukes with the accessory figures of "Night and Day," "Morning and Evening," are among the greatest works of sculpture the world can boast. In the architectural setting Angelo designed for these wonderful figures he has so related the scale of the architecture to that of the sculpture, so managed its relief and mass, that the sculpture, by no means large in actual dimensions, is made to seem colossal and yet without making the architecture seem small or trivial, or overpowering the beholder with mere bulk in the sculpture — an extraordinary achievement. He worked at this unwelcome task for thirteen years, and as soon as Clement died in 1534 he left it as it was and departed from Florence forever; nor would any inducement persuade him to complete it. We say unwelcome task because Angelo was during most of his life between two fires: his sense of obligation to the Medici family, to whom he owed the educational advantages of his youth and the opportunities they had given him to exercise his powers; and his hatred, as an ardent republican and disciple of Savonarola, of all they represented politically.

Alessandro Farnese followed Clement VII as Paul III. He too coveted the lustre the great artist could shed upon his pontificate and ordered him to paint the "Last Judgment" in the Sistine Chapel on the wall above the high altar. This was in 1534; and the following year Paul made him "chief architect, painter, and sculptor of the Holy See." It was eight years before the stupendous fresco was finished. In the meantime he designed the buildings of the Capitol in Rome and, we may suppose, made a beginning upon the work connected with the dome of St. Peter's. He had, when he began this work at sixty years of age, nearly thirty yet to live; and these were, so far as his personal circumstances were concerned, years of comparative ease; the acknowledged

master of the world of art, with means to gratify every reasonable wish, it was only the storms of his spirit that disturbed him. He had always despised material comforts and at the summit of his career kept but one old servant who had been with him for years and knew his ways. He dressed with the utmost simplicity in an age of much display, and usually ate but once a day and sparingly. He never married, saying that the art he had espoused was trouble enough for him. Freed of all close family ties, living for his work, a poor sleeper, he used to rise in the night and carve by the light of a candle fastened in his cap. He shrank from, or withdrew himself from, social contacts as far as possible, and indeed would seem to have repelled men by his brusque manner and outspoken ways. He had the impatience of the brilliant man for the foolish or inconsequent, the high disdain of the eagle for the mole. That he was not without a grim humor is indicated by the story of a visit from the Pope, who criticised a nose as being too long; Angelo mounted the scaffold with some marble chips concealed in his hand, and striking his chisel with the mallet without touching the nose, let fall the chips. "Better, far better!" cried the Pope.

His friendship with Vittoria Colonna, the still beautiful widow of the Marquis of Pescara, celebrated by him in a sequence of sonnets, is one of the famous friendships of history, and lighted the closing years of the old artist's life. When she died he was alone indeed.

His work is characterized from his earliest youth by the unmistakable note of style — style in its general sense as indicating high distinction, and style in the sense of a powerful personal accent. Upon his sculpture and painting this is not the place to dilate; yet his painting and sculpture and their animating spirit must be studied and grasped if his work is to be understood — and it is essential to understand all of his work because of its influence, chiefly unfortunate, upon the little men of the Italian decadence and those who followed them, who thought they caught the secret of his

genius by imitating his faults and manner. His architecture is that of a great artist who was also a great sculptor and a great painter, who had made so profound a study of the human frame that it was plastic in his hands to the expression of any mood or attribute he chose to give it. He knew the truth so well that he saw the higher truth that lies behind and above the apparent fact; so that he was above the rules by which lesser men must guide themselves. When he dealt with architectural form he handled it in the same spirit; the mass and proportion, the voids and solids, the mouldings and ornament, which are the elements and the alphabet of architecture, were to be disposed in accordance with his will, to produce the impression that had formed itself upon the dusky curtain of dreams against which the artist projects the visions of his fancy. He treated architecture as a problem in the disposition and modulation of light and shade, just as a sculptor does. And with his intensely personal point of view, the path he trod along the heights with the authority of genius was perilous footing for the weakling and the myopic pedant.

At the foot of those heights where he dwelt alone the path of Renaissance architecture divides. Upon the one hand is that of his imitators, leading to exaggeration, to the extravagant and noisy rhetoric of affectation, the corruption and negation of that structural quality which is the soul of good architecture, to the Baroque and the Rococo; on the other, that of the formulists, the rule-makers, that of Palladio and Vignola and all the little breed that followed in their train; for, in all periods of art, the inspiration spent, behind the joyous creators moving in careless freedom, come the portly purists, the makers of categories, marching with an air of severe importance, armed with books and instruments of precision to show how art should be manufactured and by what rules it must be confined.

Michael Angelo's grave is in Florence, in the church of S. Croce, and about it gathered prince, prelate and pauper

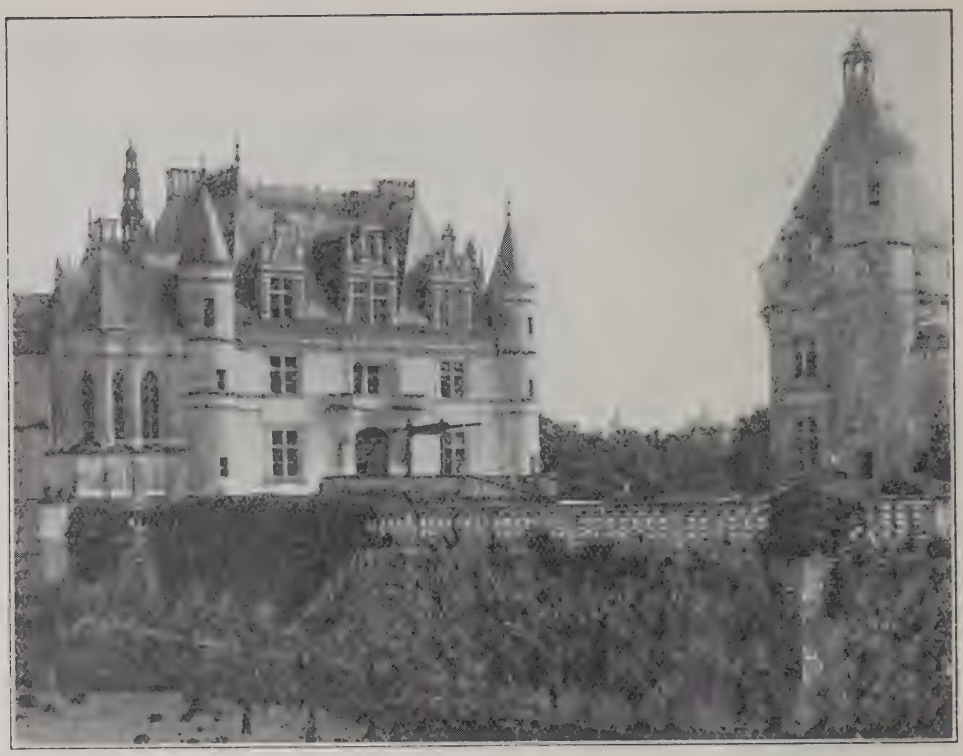
when he was laid to rest at last. As one comes down from Tuscany as he came so often, from the Alban Hills, from the olive clad slopes of Tivoli or from the sea, the great dome of St. Peter's seems to float like a bubble across the golden reaches of the Campagna, majestic, withdrawn, remote, like the spirit of him who made it.

V. THE RENAISSANCE ENTERS FRANCE

Italy had done her work. With a noble bounty she had distributed far and wide the re-found and inexhaustible treasure of knowledge and it was to the care of France she was now to resign it. It is to the first real contact of France with the fruits of the Renaissance in Italy we must now return. The fall of Italy was swift after the first encounter. During the period we have traversed in Italy, the northern nations had emerged — or, to speak more accurately, the kings of France, of England, and of Spain had established their power on a firmer footing, and national consciousness in their subjects was in process of increase. We need go no farther back than Louis XI of France, who was to reign for eight years after the birth of Michael Angelo, to trace the immediate causes of the French invasion and its frightful sequels in Italy. That astute monarch had caused to be willed to the royal family of France the claim of succession to the Kingdom of Naples, held by old King Réné of Anjou. When he died, his son Charles VIII was thirteen years old and took the reins of government at twenty-two, in the momentous year 1492. America was discovered in that year by a Genoese sea-captain in the service of Spain; it was also the year when Ferdinand the Catholic and Isabella of Castile took Granada, drove the Moors from Spain, consolidated their power and thus, aided by the flood of gold which presently poured into Spanish coffers from the loot of Peru and Mexico, prepared the way for an active participation in the spoliation of Italy, and for the transmission of the art of the Renaissance to Spain.

THE DOME OF ST. PETER'S, ROME, Michael Angelo

PLATE 54



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1. CHÂTEAU AT CHENONCEAUX, FRANCE
2. CHÂTEAU AT BLOIS — FRANCIS FIRST'S WING

Badly advised, Charles, a deformed and scatter-brained boy, decided, if decision it may be called in so inconsequent an individual, to press the claims of his house to the Crown of Naples and, after intrigues the threads of which are not germane to the main purpose of this narrative, invaded Italy in 1494 with a large army of horse and foot, and marched south through Milan, Pisa, Florence, Siena, and Rome, to Naples, practically unopposed. Italy had been too long divided, her petty states were too jealous, her vision too parochial, to oppose effectively even this holiday invasion. The prophecies of Savonarola had their effect as well, for he had long predicted the coming of a deliverer for Italy "in the name of the Lord," and he and masses of the population mistook Charles for this political Messiah.

Charles entered Naples as a conquerer in 1495. A league against him, headed by Venice, had been formed as he had moved south, and he began a hasty retreat to France. The significant aspect of this invasion for our purpose here, is the effect of Italy upon the Northrons. In the invading army, besides French from many provinces — of whom it is interesting to record that at this time they were called "the Barbarians" by the highly civilized Italians — there were Swiss bowmen from the Alps, and the gross and brutish lancers of Germany. The country herself, her warmth and color, the perfume of her blossom-laden trees, her fertile plains and terraced hillsides, had the same allure for these coarse untutored ruffians as she had had in the days of the Huns and Goths from whom they were descended. Like their ancestors their eyes were dazzled and their cupidity aroused by the splendors about them; and their captains and rulers saw in enfeebled Italy a rich field for future pillage.

Behind this screen of mercenary soldiers and their leaders was the population of France, the people who, little over a hundred years before, had built the great Gothic cathedrals — Nôtre Dame, Amiens, Rheims, Chartres. A people of an acute and logical turn of mind, which, in her builders and

artisans, lay and clerical, applied to the arts of construction, gave intellectual expression to an emotional inspiration; in other words, the French possessed a strong sense of construction, of the articulation of all parts of a structure in such a manner as to make it a living organism, expressive of its function in plan, elevation, and section; this is the intellectual side of design, that which must follow the emotional act of conception if art is to rise to its greatest heights. At the very beginning of the Middle Age, one of the forces ready to be utilized in the reconstruction of society was to be found in the monastic orders — the monks of Cluny, the Cistercians, the Carthusians. The Cluniacs in particular formed strong schools of architects, painters, and sculptors, in which both the monks and the laity were instructed; not schools of art such as we moderns instinctively think of, but more in the nature of guilds or unions of workmen, with the grades corresponding to apprentice, journeyman and master workman.

By the time of Charles VIII the passionate devotional impulse which had united king and vassal, priest and people, in the desire to rear vast temples for the worship and the glory of God had largely spent itself, and the growing importance of the burghers in the body politic had diverted the impulsion to build into secular channels; and buildings dedicated to the common uses of the people, town halls and guild halls, had begun to rise; and with the crescent wealth and political power of the burgher class, more and more money and effort were lavished upon their dwellings. The increased security of the times began to have its effects upon domestic and civic life, which in turn, as ever, gave their stamp to the architectural expression of that life. The houses of the towns began to have a more open and cheerful air; but nowhere was the nascent sense of security, the effect of order and internal peace, more marked than in the increase in the number of dwellings of the greater and the lesser noblesse, built outside the city walls in suburb and countryside, and in the

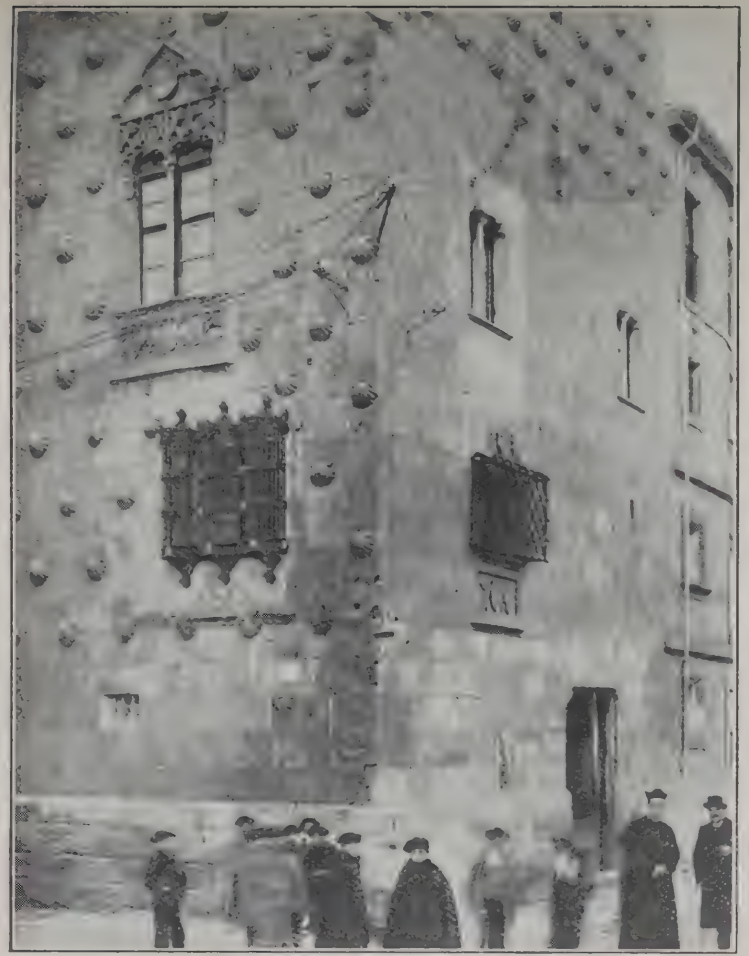
gradual change in their appearance; while it was yet too soon to fill up the moats around the *châteaux* — as later on was done — and while the general feudal features of great round towers and overhanging battlements were retained, the frowning countenance of the feudal fortress began to assume a more genial and peaceful expression. These huge cylindrical towers at the corners of the *châteaux*, designed to rake the walls and moat with a cross-fire of arrows or musketry, were soon to dwindle into oriel windows from which pleasant glimpses could be had of park and garden.

When Charles came back he brought with him in his train a number of Italian artists and workmen, but only slight traces of their activities may be observed for some time. Louis XII succeeded Charles and ruled until 1515 when the long and fruitful reign of Francis I began. Through the twenty years between the invasion of Italy by Charles VIII and the accession of Francis, indeed until about 1544, France and Spain, each with strong claims to the throne of Naples, were in constant conflict. Italy became the battle ground of the fierce soldiery of France and the ruthless infantry of Spain. This struggle brought Francis into close personal contact with Italy and Italian art. He too invaded Italy. He too invited the artists of Italy to come to France and show the French artisans how to build and carve and paint in a manner new to them. Lionardo da Vinci, Francesco Primaticcio, and Niccolo dell' Abbati were some of those who responded. And as in all periods of transition from one style to another, the main structural features, those which were the natural outgrowth of native or local living conditions were the last to be modified and give way before the new force; the coming change is manifest in mere details of cornice, of mouldings and carved decorations around doorways, and in the larger windows which replaced the arrow-slits of the primitive castle — a change comparable to a change of complexion, rather than a change in muscular structure, in the human countenance. While the Early Italian Renaissance is also a

style transitional from a general prevalence of Gothic forms to Classic, the change to the new mode is much less marked and the disparity in character between the structure and the decoration of its surface much less evident than in the Early French Renaissance, commonly called *François Premier;* for in Italy, as previously indicated, the structure itself was never truly Gothic in principle, whereas the buildings upon which the Italians imported by Francis wrought were not merely Mediaeval but Feudal — and feudalism was a plant which never flourished in Italy, where its flower, chivalry, languished also. From this time on, however, the Classic influence was to gather strength and at last to modify, profoundly and fundamentally, the structure of the buildings, step for step with the changes in the fabric of society; and from this time on, the stages of the development of the Renaissance in France are to be identified by and with the name of the reigning monarch — François I, Henri II, III and IV, Louis XIII, XIV, XV and XVI. The art of the Renaissance was to become monarchical, just as the politics of all Europe were drifting toward monarchy more or less absolute, to depend for its prosperity upon the will of the King, to become less and less an emotional, and more and more an intellectual, expression of life and manners. But before we follow the main stream of that development, which will lead us to the very threshold of today through the natural channels of consanguinity and racial sympathies, we must turn aside for a moment to examine the course of the Spanish branch, its causes, character, and direction.

VI. SPANISH CONTACT WITH THE ARTS OF ITALY

Spain, like Italy, is a peninsula, and is shut off from France by the Pyrenees. Her easterly and southerly coasts are washed by the warm waters of the Mediterranean, and on her westerly and northerly shores the cold waves of the At-



CASA DE LAS CONCHAS, SALAMANCA, SPAIN

HOUSE OF ST. CATHERINE, SIENA, Attributed to Peruzzi

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1. PALACE OF VERSAILLES, Mansart, Bernini, and others
2. THE LOUVRE, PARIS

lantic break. The interior, in the north-central portion, is a table-land of considerable altitude from which the land slopes toward the ocean and the sea, a conformation which produces a wide variety in climate, and extremes of temperature. Added to the old Iberian stock were Carthaginian blood — that is to say, Phoenician-Semitic — Roman blood, and the residuum of the Kingdom of the Visigoths who conquered and held the peninsula. In the early eighth century was added that of the Moorish warriors who overran it, pushed into France as far north as Tours and were flung back by Charles the Hammer beyond the Pyrenees. By the close of the thirteenth century the Christians had pressed the Moslems toward the sea until their last foothold was the province of Granada on the south-east coast. Their sojourn was long enough everywhere to leave an indelible impress upon the arts of Spain. The Mohammedans were by no means a horde of illiterate camel-drivers who made a cult of bloodshed; during the Dark Ages, when all Christendom was sunk in a horrible morass of mental and political gloom, western Europe was almost enveloped by the Moslems and their virile, refined, and cultivated civilization. To them, in Spain, equally perhaps with Rome, is due the introduction of the dome, brought from Syria and Persia. The distinctly Oriental arts of glazed tile and colored terra-cotta and pottery came with them by way of North Africa, or in the fleets of feluccas which for so long disputed the supremacy of the Mediterranean with the navies of Venice and Genoa. But that which acted more strongly upon the character of Spanish architecture than any other influence, that which gives a Spanish city its peculiar physiognomy, is a Moorish, Mohammedan, Oriental, social custom — the seclusion of women. To this is due the bare walls pierced high up with heavily latticed windows from which the women of the Moorish household — four wives by the Prophet's allowance, and many servants — could watch the street without themselves being seen; to this is due the plan of the typical Spanish

house, built around courtyards like the houses of the East, where the family life might go on unseen.

Spain may be said to have had no indigenous art. When the Moorish wave receded, the Romanesque and then the Gothic flowed in from France, and these in turn were followed by the foam carried by the tide of the Renaissance. But to each of these successive waves of style that broke on Spanish soil, the Spaniard gave a local color, an accent racy of that soil; and the irrigation of their flux and union yielded a harvest frequently bizarre, often extravagant and even ugly, but always virile, interesting, and significant.

When Ferdinand and Isabella had driven the Moor into the sea, when Spain had become a part of the Holy Roman Empire through the inheritance by King Charles I of Spain, of the realms of his two grandfathers, Ferdinand and Emperor Maximilian I, and when he, as the Emperor Charles V, thus reigned from 1519 over an empire comprising all of modern Germany and Austria, the Netherlands, Spain, Sicily, Sardinia, the kingdom of Naples — which meant all southern Italy — and everything in the two Americas west of Brazil, then France and Spain made Italy their cock-pit in their struggle for supremacy in Europe; and in the course of this conflict Italy was definitely brought within the Spanish sphere of influence, to which an earlier contributing factor had been the Spanish atmosphere of the Papal court and politics when the Spaniard, Alexander VI, the unspeakable Borgia, sat in the chair of St. Peter. An incident of this struggle was the descent upon Rome of the Imperial army, who clamored for their pay at Milan and were led to Rome that they might pay themselves by sack and pillage. These were the ruffians who tortured Baldassare Peruzzi; and it was another great artist, Benvenuto Cellini, who claimed to have shot and killed their commander, the Constable de Bourbon, with his own hand, from the ramparts of the Castle of S. Angelo in 1527.

These military and political contacts bore their usual fruit in the arts. The Spaniards, be it observed however, came

in contact with the arts of the Renaissance, not in the early stages of their development, but in their fullest flower; and this prime, in Italy, was marked by restraint and dignity, by reserve, and a kind of subdued richness. But the Spanish temperament demanded flamboyant display; and with the incredible wealth derived from the loot of the Incas to foot the bills, arose the incredibly rich buildings of the Spanish Renaissance. The local structural forms persisted, very little modified, and the Spanish interpretation of Classic detail was flung upon it like an embroidered cloak. Over-rich, overblown, with strange freaks of fancy, non-constructive in essence, it had a rapid decadence into outrageous depths. At its best it is sumptuous, dignified, splendid. At its worst it has the horrid fascination of some dread disease.

The winds of Fate carried the architecture of the Spanish Renaissance westward to Cuba and to Mexico, destined later to meet and strangely mingle, in the United States, with its distant cousin, the prim and puritanical descendant of the Italian, the so-called Colonial style.

We may dismiss the influence of the Renaissance in the Netherlands as a negligible factor in the general trend of development, and its manifestations as unimportant. The picturesque character of Dutch and Flemish architecture, due to predominant Teutonic ancestry, resisted the order and measured harmony of Classic design and yielded only in a compromise that lost the virtues of both elements. Some of this work resembles the ugly style prevalent in England during the reign of James I, known as the Jacobean, and may have influenced it. Some of its simpler and more agreeable characteristics were transmitted to the American colony of New Amsterdam as the Dutch Colonial Style.

VII. FRANCE ASSIMILATES AND DEVELOPS RENAISSANCE ART

We return to France. We had said that from the early years of the reign of François I onward, the art of the Ren-

aissance in France was to become monarchical, its taste to reflect the taste of the King, not of the people, and that it ceased to be the child of creative emotion and was adopted by the cool clear intellect of France.

During the epoch of François, the royal Château at Blois in the silvery valley of the Loire was enlarged; the church of St. Etienne du Mont in Paris was built — interesting in its curious use of Renaissance detail embroidered upon a Gothic structure; to this period also belongs the lovely Château of Azey-le-Rideau in Touraine, and the colossal hunting-lodge François built for himself at Chambord, down in the flat and sandy country south of the Loire. Fontainebleau, another lodge, at the edge of the great forest forty miles from Paris, was begun. In 1527 the King tore down the ruins of the old Mediaeval castle, once the rendezvous of wolf-hunters — the Louverie — and began a new palace, the Louvre, on the same site in the heart of Paris, employing Pierre Lescot, a French architect who continued to be employed upon it by successive sovereigns until he died in 1578.

Henri II was another great builder; he married Catherine de' Medici and the French court was pervaded by Italians. After her husband's death in 1559 this able woman was, during the thirty years that followed, practically Regent for her three sons, successively Kings: François II who reigned but a year; Charles IX whose reign was stained by the massacre of the Protestants on the eve of St. Bartholomew; and the feeble degenerate, Henri III. It is easy to see that the arts and the artists of Italy would be most hospitably entertained at the Court of France. The Italian style, at first, as in the epochs of Henri II and Henri III, stammering and awkward in its endeavor to express an alien civilization, began to be more at ease and to acquire an accent distinctly French. The French taste and genius, working with these new elements, produced new and charming combinations different from any the Italians had devised. Indeed up to the time of Louis XIV the French succeeded measurably in avoiding the

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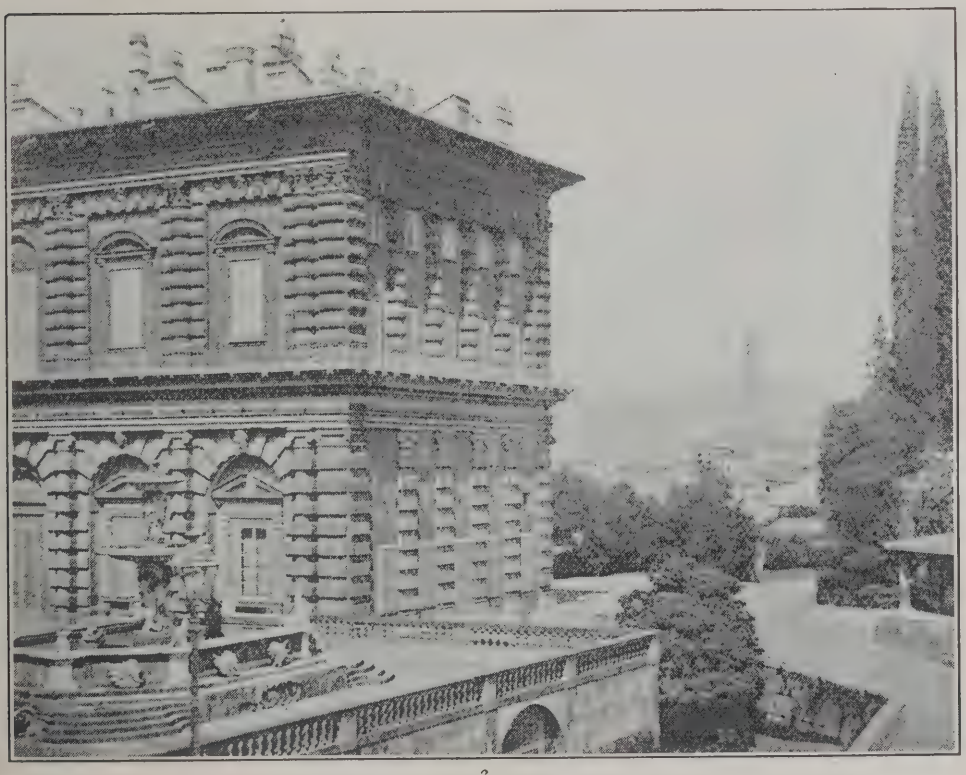

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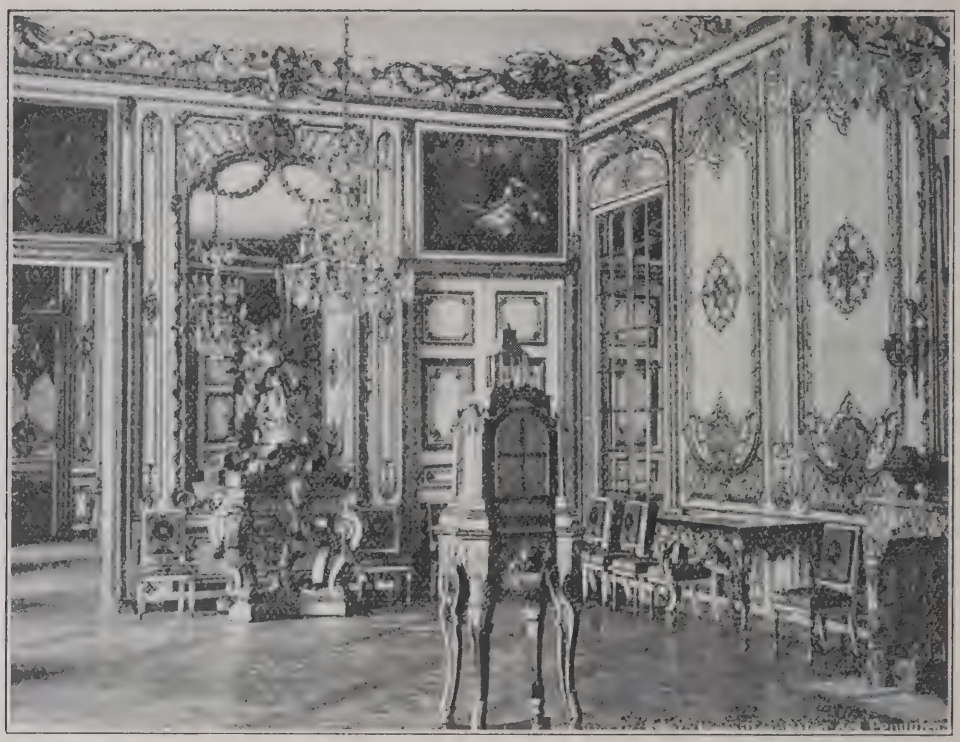
1. THE GARDEN FRONT OF THE PALAIS DU LUXEMBOURG, PARIS, Debrosse
2. THE GARDEN FRONT OF THE PALAZZO PITTI, FLORENCE, Ammanati



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1. AN INTERIOR IN THE STYLE LOUIS XV
2. THE PETIT TRIANON AT VERSAILLES, Gabriel

stupidities of the work of the so-called High Renaissance of Italy — that of Vasari, Vignola, Palladio, and their ilk.

Henri IV, despite his preoccupation with wars, women, and politics, found time to interest himself in building, establishing artists of all kinds in the Louvre; he made additions to the palace, as well as to St. Germain and to Fontainebleau, both of these being in reality hunting-lodges. He embellished Paris too, built bridges, and the Place Royale, now the Place des Vosges. He married Marie de' Medici in 1600, and when the dagger of Ravaillac put an end to his gallant life in 1610 she became Regent for their son, Louis XIII. In 1615 Louis married Anne of Austria, and in that same year the Queen Dowager bought the house and grounds of the Duc de Piney-Luxembourg on the left bank of the Seine and commissioned Solomon Debrosse to build her a palace there. Marie had been brought up in the Pitti Palace in Florence and it is evident that she wished to have something like it — for the source of the Luxembourg design is plain at a glance as the garden front of the Pitti, built by Ammanati between 1558 and 1570; and in the gardens, despite their differences, is to be clearly discerned the outlines of Triboli's amphitheatre in the Boboli. This instance is recounted as an example of one of the many ways in which the development of architectural style may be affected.

Vignola is known to have lived and worked in France. Palladio had been dead but thirty years or so, and the writings of these two men and of Serlio, Scamozzi and others were unquestionably in the hands of the architects of France or in the libraries of their patrons. Of course such text books had a certain value to men dealing with a new style; but, sometimes in turning over the pages of an old book, we find a brown and brittle leaf, placed there for its beauty when it was full of the stirring sap of spring, when the sun shone through its lacy fabric in a green-gold radiance, or when it burned with the splendors of autumn; and like the poor withered thing are these dull and juiceless treatises in which the men

of a non-creative age thought they were preserving the spirit of an art.

The Italian influence at the court of France was to diminish after the marriage of Louis XIII with the Austrian, and be quite extinguished with the advent of Louis's great minister, Cardinal de Richelieu, patron of letters and of art and artists, more soldier than priest, the astute statesman who established the power of the French crown and reduced the great nobles of France to the status of mere courtiers and bowing gentlemen, and prepared the way for the brilliance of the reign of Louis XIV, the cynical decadence of that of Louis XV, and the Revolution when Louis XVI paid on the scaffold for the sins of his house and its ministers. Among other events of the Cardinal's long and brilliant career was his visit to Italy as Lieutenant General of the French forces invited to save her from the Spanish domination. We may imagine what direct contact with the arts of Italy meant to such a man. This was in 1630; five years later he founded the French Academy and the Royal printing press. He died, the year before his king, the real ruler and master of France. During this long reign, in which the art of building was royally encouraged, Paris was embellished with many new monuments and the style we recognize as the French Renaissance continued its steady progress, to its culmination, with all the arts of France, in the *Epoque Louis Quatorze* on whose threshold we now stand.

We have before us a reign of no less than seventy-two years — the reign of an able king, inordinately vain, of stature so insignificant that he increased it by two extraordinary devices, high-heeled shoes and a monstrous wig of curled horsehair. But if his inches were few, he was every inch a king, with an eye "to threaten and command." Apparently shy and lacking in initiative when he first ascended the throne, he speedily showed his real quality, dispensed with a prime minister and ruled his kingdom for himself with the advice of commoners like Colbert, his Minister of Finance. It was this

Louis who pronounced that astounding phrase, "*L'Etat, c'est moi!*" — "I am the State!" And since his subjects concurred in his excellent opinion of himself as the sun and centre of the world, "*le Roi Soleil*," "the Sun King," we are obliged to regard the art of France in his reign as being in very truth the art of Louis XIV.

His time was one of war and conquest and of great works at home initiated and carried out. He systematically reëstablished old manufactures and encouraged new ones, especially all those which minister to sumptuous living, beauty, and the pride of life. The system of taxation inherited from Richelieu relieved the noblesse at the expense of the lower classes and released vast sums for the uses of luxury. Tapestries, carpets, furniture of the most splendid, mirrors, silks, velvets, gold and silver ornaments, porcelains, filled the houses of the rich and noble. The dress of the period was in keeping with such magnificent equipage and the frame in which this magnificence was exhibited was as splendid as the scene it enclosed. To be sure, the science of plumbing was not yet developed and there was a certain unsanitary atmosphere, a free use of perfume in place of soap, as the envelope of this glittering display.

With the close of the *Epoque Louis XIII* all trace of a transitional style disappears and the *Epoque Louis XIV* is one of complete sophistication and mastery of thoroughly assimilated elements. Louis XIII had built a hunting-lodge out at Versailles, twelve miles from Paris. Louis XIV proceeded to enlarge it, and as it grew, his vision of it as a place of splendor and imposing dimensions meet for such a monarch as he, grew also. He summoned Bernini, architect, painter, and sculptor, from Rome, the man who built the colonnades around the Piazza of St. Peter, an architect of the very close of the Italian decadence, when the pure spirit of the Classic was overlaid and obscured by the pompous, the extravagant, the affected, and the artificial. Versailles was to be not merely the royal residence, but the seat of government.

Louis Le Vau and J. Hardouin-Mansart were the French architects employed upon it — the latter the inventor of the roof known as the mansard, one of the ugliest devices of man. The superb park was laid out by Le Nôtre, inspired by the villas of the Late Renaissance in Italy. A hundred sculptors worked under the direction of Le Brun, the painter who was practically dictator, under the king's favor, in the realm of art. This vast enterprise gradually absorbed most of Louis's interests in art, but in 1665 he ordered the construction of the easterly wing of the Louvre from a design by Claude Perrault, a physician. Paris was paved, her streets lighted, and quays, squares, and triumphal gates were built.

In 1671 the Academy of Architecture and the French School of Fine Arts in Rome were founded. Just as the French Academy was intended primarily to encourage belles-lettres, to purify the French language and maintain it in its purity, in short to establish a standard, so also the Academy of Architecture was to foster a scientific study of the principles of architecture, with the School of Fine Arts in Rome as a sort of working laboratory at the richest mine of architectural precedent in Europe. Their foundation marks the beginning not merely of governmental education in the arts but in large measure the official control of national taste through educational agencies. This is not the place for a polemic upon the merits and defects of the Academic system, but no study of the Renaissance however brief may ignore reference to the effect upon the art of France of official instruction and control — and its derivative effect upon that of America. When the agencies of education are wisely administered; when recognition is accorded the thesis that it is the eternal principles of design that are to be imparted to the student, not the mode of the moment; when discipline of mind and hand and eye is inculcated to guide the imagination in rational, not aberrational channels; when the attention of the student, and indeed of the nation, is directed toward those works which have withstood the changing fashions of

generations and of centuries as valid standards of merit; when the authorities have breadth of vision and judgment; then all is well. Too often the effect of official direction has been to stifle progress by refusing that official recognition so vital to an artist's career in a country which looks to official sources for a seal of approval, and to refuse that recognition to any work that departs from a norm established by the taste of the prevailing authority — in short to discourage original talent. We have come a long way since Brunelleschi and Donatello took their slender baggage and started off for Rome to study architecture on their own initiative. But the French School has recognized the importance of a constantly renewed contact with the original sources of classic inspiration, and has yearly sent her most promising men to Rome that it might, Antaeus-like, renew its artistic vitality. And to the honor of her school of architecture be it said that its influence has been directed toward the instillation of principles and that it has not endeavored to teach taste. It was the keen French intellect applied to the study, measurement, and restoration of the buildings of antiquity in Rome, in Sicily, in Greece, and in Asia, the analysis of the principles thus discovered, that developed the true modern science of architecture; for architecture is a science as well as an art — the all-inclusive art. And this study has been directed to the fundamentals: of plan, of the expression of plan, and of the uses for which a building is designed, as well as to the decorative graces of detail. We may observe to the present moment the persistence of the sense of organic structure characteristic of the French from the time when they began to work upon the raw material out of which they evolved their native and greatest architecture, the Gothic of the thirteenth century.

To Louis XIV, then, we are indebted for the official recognition of art as one of the glories of a nation, and for the establishment of official agencies of instruction. Before we leave him we must signalize two or three other important

works of his reign: the church of Val-de-Grace by Mansart, the Hotel des Invalides by Bruant and the dome of its church by Mansart; all in Paris. Toward the close of Louis' life he fell under the spell of the Widow Scarron, later known as Madame de Maintenon, who had been governess in the royal family. This lady, according to some a designing minx, a prude, and a pious spoil-sport, according to others a pure and noble woman with none but the highest qualities and motives, became eventually the morganatic wife of the old King; whatever her real character, she succeeded in persuading Louis to a suppression of the courtly gaities in which he had always delighted, and to the creation of a sanctimonious atmosphere difficult for the court to breathe.

When he died the reaction was terrific. Louis XV was a child of five at his great-grandfather's death, and the dissipated Duke of Orleans became Regent. Neither child nor man was qualified to exert a restraining influence upon a society that concealed under the most graceful manners a profound and cynical corruption. After the dull closing days of the old régime the court gave a sigh of relief and plunged into a life of gaiety. Society, during the long reigns of Louis XIV and Louis XV became highly organized, highly conventional, thoroughly artificial. It was not an age of individualism such as that of Raphael and of the early years of Michael Angelo, in which art itself was, comparatively speaking, a new thing, and as to which the stage of experiment and discovery had not yet passed. It was an age of conformity to usage, to type. It was an age which did not think high thoughts, which did not wish to be made to think — merely to be pleased; and it drifted to the sound of music that muffled the ominous mutterings of the abyss into which it was so soon to plunge. A certain type of taste, an observance of what was felt to be good form, were demanded of courtier and artist alike. And to this agreement of society upon taste and form may be ascribed the essential similarity that lies below the surface differences of this or that man's work. Art has a way

of holding up a mirror in which the bitterest truths about the life before it are pitilessly reflected. And in the frivolous, extravagant, decadent art of the *Epoque Louis Quinze* may be discerned the soul of the period, empty and perverted.

It was a legacy of bankruptcy as well as of corruption Louis XVI inherited from his grandfather. He was a fairly good man as kings go, not very able, married to an Austrian princess, Marie Antoinette. The dramatic circumstances of their fall and death have, with the passage of time, conspired to throw a veil of romantic interest about these unfortunate creatures. In spite of the vast debts accumulated by Louis XV, Marie Antoinette could see no reason why the brilliance of her queenly state should be dimmed by the economies proposed by the officers of Louis XVI. A ruinous series of loans was floated until the Minister of Finance could float no more, declared the ship of state aground and suggested that the States General be convoked to get her off the shoals. This was the chance the commons of France had looked for with a desire growing grim for one hundred and seventy-five years. We omit the steps by which they, as the Third Estate, came to declare themselves to be the real power and source of authority in the State. The State was to be no longer "I, the King," but "We, the People." In short, Absolute Monarchy and the Divine Right of Kings was to come to death-grips with the Spirit of Liberty and the Rights of Man. Nor shall we recount the story of the flight of the King and Queen, their capture and return, their imprisonment, trial and death. Suffice it to say that man in his blind instinctive struggle upward to Liberty, Equality and Fraternity, took the bloodstained path of Revolution. And with the Revolution the natural course of the Renaissance was checked.

Upon the accession of Louis XVI art and manners experienced a reaction from the license that had prevailed, and the *Style Louis Seize* is orderly, refined and beautiful. Structure came into its own again. In the art of Louis Fifteenth's

time, every line, every form, that could be curved, was made to curve and, where possible, every curve was a compound curve. His reign had been the reign of the petticoat. Such women as La Pompadour, Du Barry and an endless stream of other courtesans dominated the scene. But as soon as the brief period of transition was past, a greater decency of manners supervened, the normal traits of rational design resumed their sway and gave promise of rising to the highest level the architecture of the Renaissance ever reached. The Revolution, with the elevation of the educated middle classes to prominence, with the prevailing inclination of the period to inspire itself by the stern virtues of republican Rome, turned men's minds backward rather than forward, and thus, in art, resulted in the purely factitious and artificial styles of the Directory and the Empire. In the creation of these of course is to be counted the personal influence of Napoleon, who saw himself as Caesar — Caesar in ermine and silk stockings.

Before we cross the Channel to England and trace the progress of the Renaissance there, let us take a backward glance and sum up the relative strength in France of the forces that contribute to the development of architecture. With the exception of the southeasterly portion where the Alps and their foothills thrust forward into France, the land is practically one great rolling expanse. No province is cut off from another by any natural barrier of sufficient difficulty to favor the cultivation of strong local individualities. Politically, the tendency from the time of Louis XI was all toward concentration of power in the hands of the King, with a highly centralized government in or near Paris. And with the King's writ the art of the capital also ran to the provinces, to be slightly modified locally by the influences of climate, materials, and the original racial characteristics of the provincials, freer and gayer in Provence, the land of gold and azure, than in Brittany, the old, grey, granite country of the Druids. So that we find far less difference between town and town than in Italy, and a comparison of the cities of France

1

2

1. GREENWICH HOSPITAL, Inigo Jones
2. SYDENHAM HOUSE, ENGLAND

ST. PAUL'S, LONDON, Sir Christopher Wren

PLATE 61

such as we made of Italian towns would turn upon shades of difference too subtle, too technical, for the range to which we must limit ourselves here. The like is true of personalities; when men tend to conform to one general pattern, when the conditions of their life are on the whole commonplace and lacking in color and the accent of the picturesque, an account of such lives is of mild interest. Gentlemen in periwig and ruffles, backing their way out of the Presence, plans in hand, do not arouse precisely the thrill of interest we feel in the doings of men like Cellini and Michael Angelo with their free, outspoken, and rugged ways.

Religion exerted very little influence upon the art of the Renaissance in France, in spite of the strength of the Protestant movement, in spite of the long-continued persecution of the Huguenots, in spite of the religious wars which at times threatened to disrupt the realm. The royal power, buttressed by the Church of Rome, outweighed the influence of the simple religion of Christ, and the religious architecture of Renaissance France is as worldly and secular as the spirit of the monarchy.

Personality, power, patronage, everything, was concentred in the person of the King, who acted as a kind of reflecting surface throwing back in a blinding splendor the rays of glory contributed by the artists and men of letters clustered about the throne.

VIII. THE RENAISSANCE IN ENGLAND AND HER AMERICAN COLONIES

In England, as in France, there are no geographical barriers to deter the easy spread of a general style and character. The country is even smaller. The royal power, while held in check by the Parliament, was, nevertheless, the source of influence. When Henry VIII came to the throne in 1509, six years before Francis I of France, and ten before Charles I of Spain became Emperor as Charles V, the Gothic style still

held sway in England. Where French Gothic had flowered out into the flame-like lines that gave the name Flamboyant to its latest phase, English Gothic had stiffened into the Perpendicular style as though it were a sentient thing and felt the impending Renaissance in its veins. Forty-nine years later, King Henry's great daughter Elizabeth became Queen, to rule for forty-five years and give her name to the most brilliant period of English history, the period corresponding to the Early Renaissance in Italy. Foreign voyages and exploration, conquest and colonization, the shattering of the Spanish power on the sea, a strong policy at home, brought peace and the prosperity of peace to Britain. The resplendent figures of English drama and literature, Shakspere and Jonson and their group appeared. It had taken over one hundred and fifty years for the Renaissance to interpenetrate English life, letters and art.

The comedies of Shakspere indicate how men's minds were turning toward Italy. In these, and in the tragedies of the Elizabethans, is evidence multiplied of English travel in Italy and of the fascination she exerted over the imaginations of the Northern nations, wherein dread, horror, and a fearful curiosity were commingled.

From the time of Elizabeth the old feudal character of the English castle gave way to the English country house, with its air of warm and sympathetic domesticity — a trait that was to be transmitted to the colonies of America named from the Virgin Queen. And in the manner that has become familiar to us, the transition from Gothic to Renaissance manifests itself at first in the minor details of moulding profiles, and naïve attempts to imitate Italian ornament. The stages of the English Renaissance are not invariably designated by the name of the reigning sovereign, as in France, but rather by derivatives if at all, as: the Elizabethan Period; then the Jacobean, from James I who next succeeded; Charles I and Cromwell the Protector gave no title to the work of their time, and for once the artist prevails in the School of Wren;

the work of the reign of Charles II is sometimes called the Restoration; then William and Mary, followed by Queen Anne, and finally the Georgian period, beginning with George I in 1714 and continuing with the second, third and fourth Georges into the time of American independence.

One of the salient figures among the architects of the English Renaissance was Inigo Jones, born in 1573, nine years after Michael Angelo's death, and when Elizabeth had still thirty years before her. It is known that he visited Italy, and no doubt, Vicenza, the scene of Palladio's chief labors, and whose buildings were still fresh from the chisel. Palladio had only recently passed on — he died in 1585 — but left treatises on architecture behind him. Scamozzi, another architect and writer, was still practising his profession, and Vignola, whose writings have done more than those of any other one man to reduce architectural design to rote and formula, had died the year Jones was born. It was in this formulistic atmosphere of the Late Renaissance that he found himself as a student, and we may suppose that he came back to England bearing with him the tomes in which these men had embalmed the Classic Revival. But Inigo Jones was a man of native force and ability, and there is nothing timid or tentative about his work; his Greenwich Hospital is proof of that.

The Renaissance in England thus follows the Palladian tradition, strongly Italianate in the main; but after Christopher Wren had visited Paris and had seen the new work going on under Louis XIV, the Italian forms take on a French complexion with every evidence of its having been applied by an English hand. Sir Christopher made a new and comprehensive plan for the city of London after the Great Fire. He began St. Paul's Cathedral in 1675, one of the finest Renaissance exteriors in the world, crowned by one of the most beautiful domes, and built a whole series of other beautiful Protestant churches in London; we say Protestant, for England was, as she now is, separatist, and the ritual of the

Church of England produces, with the different conditions of service and the active participation in worship by the congregation, churches of a character quite different from those on the continent. Sir John Vanbrugh was another architect, older than, but contemporary with, Sir Christopher Wren; Nicholas Hawksmoor was a pupil of Wren, thirty years younger. James Gibb, another pupil, built St. Mary-le-Strand, that lovely Renaissance island in the tide of London traffic. The two names of prominence in the Georgian period are of men born under the second George: Sir William Chambers, a frigid formulist, and Robert Adam (1728–1792) who gave a turn to English design known as the Adam Style, corresponding to the neo-classic of the Directory and Empire in France, but more graceful, not so dry and rigid; Adam studied Roman antiquity at first hand in Rome itself, and was a friend of Piranesi, the great composer and etcher of architectural subjects, who dedicated one of his plates to the English visitor.

The architecture here in the United States, corresponding to that of the Georgian period in England — and often so called — is generally known as the Colonial. It is a direct descendant of the Renaissance architecture of Italy, precisely as it was the same spiritual liberty men pursued in 1400 in Italy that they still fought for in England in 1600 or sought in the wilderness of America beyond the rim of the Western sea. The Puritans, who wished to escape from the oppressions and persecutions of James I and Charles I, furnished the element that settled New England, and their arid spirituality is typified in that Puritan product, the New England meeting-house, which presents a front to the world resembling nothing so much as the bleak, blank, bare, expanse of the down-drawn upper lip of the Pilgrim Fathers. These were the Roundheads. The Cavaliers colonized in the neighborhood of Baltimore, and there and in Virginia grew up a very different and more genial colonial society, and an architecture in

ST. MARY-LE-STRAND, LONDON, James Gibb

INDEPENDENCE HALL, PHILADELPHIA, J. Kearsley

and the curious may identify the books that were current in any given locality by the details of the houses round about. The typical Georgian design in England is rather robust and sturdy, and executed in stone; the use of wood in America, with the delicate scale it requires, with the paucity of motive drawn almost wholly from Palladian sources, with the restrictions upon design imposed by considerations of economy in a new and poor country, constituted a legacy of more than doubtful value for American architects of the last generation, making it difficult for them to think and design in terms of stone. These are factors with which the historian of the Renaissance must reckon. In any old garden we come upon spindling scions of robust stocks; the Colonial exhibits, in its meagre primness, the characteristics of a style gone to seed; and the thin and austere countenances of the great-great-grandchildren of the Palazzo Riccardi confront the passer-by across the white palings of scores of village streets in the United States.

I shall have failed of my purpose if I have failed to make clear the essential continuity of the Renaissance in art and in life from the day of Dante to the present moment. We are still in the sweep of its force, a force augmented rather than diminished, as a stream, stemmed here or there by some partial barrier, overleaps it or passes it by, cuts for itself a new channel, and hurries on its way.

BIBLIOGRAPHY

ADAM, *The Architecture, Decoration and Furniture of R. & J.*
BANNISTER-FLETCHER, *A History of Architecture.*
BARTHOLOMEW, *Literary and Historical Atlas of Europe.*
BELCHER and MACARTNEY, *Renaissance Architecture in England.*
CARLYLE, *The French Revolution.*
CARTWRIGHT, *Beatrice d'Este.*
CARTWRIGHT, *Isabella d'Este.*
CELLINI, *Autobiography.* Translation by Symonds.
DALY, CESAR, *Les Styles Historiques.*
GOTCH, *Early Renaissance in England.*
GOTCH and BROWN, *Architecture of the Renaissance in England.*
GUADET, *Elements et Théorie d'Architecture.*
GUERINET, *L'Architecture Française.*
GUIZOT, *History of Civilization in Europe.*
HEGEL, *The Philosophy of History.*
HEWLETT, *Little Novels of Italy.*
LEE, VERNON, *Euphorion.*
LETAROUILLY, *Edifices de Rome Moderne.*
MOREL, *Le Louvre et les Tuileries.*
MICHELET, *Modern History.*
OLIPHANT, *Makers of Florence*
OLIPHANT, *Makers of Venice.*
PATER, WALTER, *Studies in the Renaissance.*
PFNOR, *L'Epoque Louis XVI.*
PRENTICE, *Renaïssance Architecture in Spain.*
SCOTT, *The Architecture of Humanism.*
SISMONDI, *History of the Italian Republics.*
STRACK, *Architettura Toscana.*
SYMONDS, *History of the Renaissance in Italy.*
TAINE, *English Literature.*
TAINE, *Philosophy of Art.*
VASARI, *Lives of the Architects, Painters and Sculptors.*
WELLS, *The Outline of History.*

MODERN ARCHITECTURE

BY

PAUL P. CRET

CHAPTER IV

MODERN ARCHITECTURE

I. INTRODUCTION

La terre ressemble à de grandes tablettes où chacun veut écrire son nom. Quand ces tablettes sont pleines, il faut bien effacer les noms qui y sont déjà écrits pour y en mettre de nouveaux. Que serait-ce si les monuments des anciens subsistaient? Les modernes n'auraient pas où placer les leurs. FONTENELLE, *Dialogues des Morts.*

AFTER having followed the architecture of Antiquity, of the Middle Ages, of the Renaissance, and having thus come to the threshold of that nineteenth century, which is still so close to us, one may well feel a certain timidity in approaching Modern Architecture. May it not turn out, that the weight of the illustrious past will make what the present has to put in the balance against it, seem light and insignificant? One has the feeling, that to claim a place for our own works in this long line of masterpieces, legacy of those who have gone before us, is perhaps to overestimate our worth and to risk appearing presumptuous in the eyes of our children. It would appear that some such modesty has exercised a restraining influence on most of the authors of histories and manuals of architecture, for in nearly all such works the place given to modern art is rather inconspicuous. From which we may conclude, either that this art has been meager in production, or that the charity of the authors has led them to cover with silence the quality of this production.

The tone of the few lines vouchsafed to contemporary work seems rather to confirm the latter hypothesis, so restrained is their enthusiasm. The mildest complaint they have to make against the nineteenth century represents it as having lived but by clothing itself in the cast-off garments of the past. Of its own, it had neither a decorative system peculiar to it, nor methods of construction really rich in possibilities, nor artists

whose names were fit to stand with those of the old masters.

In the course of what follows we shall have to examine these reproaches, and to consider how far they are justified. We shall perhaps find that they are not to be taken too seriously, that often enough they spring from a false conception of what architecture means, and consequently a misunderstanding of the form of criticism to which it should be subjected. It would be astonishing indeed, if the hundred years that preceded us, having witnessed such a flowering of all the arts as no sensible person would dream of underestimating, should have been barren of just one: architecture! It would be astonishing if the times that had known musicians like Beethoven, Rossini, Berlioz, Wagner, César Franck, Debussy; painters like David, Ingres, Delacroix, Constable and Turner, Millet and Corot, Puvis de Chavannes, Sargent, Whistler; sculptors like Rude, Barye, Rauch, Canova, Carpeaux, Fremiet, Rodin, Constantin Meunier, St. Gaudens; together with an almost feverish productivity in literature — it would be astonishing if such times had left no architectural monuments worthy of mention.

To explain such a phenomenon, we should have to appeal to one of those eclipses the history of art does indeed record: times when the brilliant expression of one or more arts is accompanied by the inferior development of one or more others, whether because a people has been unable to emancipate itself from its primitive methods of expression, or because the social conditions of the times have been unfavorable to the failing arts. One might cite the painting of the Egyptians so inferior to their sculpture; the painting of the Middle Ages so far below their architecture.

But no parallel of this kind can be drawn. The architectural activity of the modern western world has been considerable, and we can think of no extraneous condition that could be said to have hampered it. All the methods of the past are known to us, there is no ancient work that we could not reproduce, if it were merely a question of making an ex-

MONTICELLO, THE HOME OF THOMAS JEFFERSON, NEAR CHARLOTTESVILLE, VIRGINIA

PLATE 64

THE CHURCH OF THE MADELEINE, PARIS

PLATE 65

act copy. We are not discussing the value of modern architecture, compared with that of the past. We are merely asking whether, in spite of a generally accepted opinion to the contrary, there is such a thing as modern architecture. To such a question there can be but one answer: Yes — and an architecture extremely rich in production.

One begins to wonder whether the authors of whom we speak may not have saved themselves the trouble of a study which would have proved complex and intricate, by denying that modern architecture presented any matter worthy of study!

Modern architecture is indeed difficult to follow, because it has been borne along on many currents. It lacks that fair unity which many are pleased to find in the art of former times — above all those who are least familiar with it. But to reject modern architecture for these reasons would be as arbitrary as to pass over in silence the painting of the nineteenth century on the pretext that the classic art of David and the painters of the Empire has nothing in common with that of the later school of Barbizon and that neither has any inspiration for the last word in Impressionism.

Modern architecture has groped its way, tried different formulas, run into certain excesses. One might almost say it had gone in for fads. But is all this so serious a crime that the work in which these inequalities of taste show themselves should be condemned without appeal? Under its dress of motley, has it not a physiognomy all its own, making it a thing of our time and of no other?

But though to set aside modern architecture because of the complexity of its movements is absurd enough, to try to characterize it without distinguishing these movements is no less so. The task is a difficult one, but no more difficult than that of recognizing the manifold tendencies in the literature and painting of the same period. Nor, if we would go beyond the mere divergence of these tendencies and try to find in them some unifying spirit of modern art, is there greater ease for

the student of letters and painting than for the historian of architecture. For in the study of all recent effort there is an embarrassment not to be avoided. The unity of an art is never apparent to a contemporary. One must be at a distance from an object to apprehend it in its completeness, and we are still too near the period we are studying for anything but its baffling detail to be apparent to us.

Fontenelle, in the passage that serves as epigraph to this chapter, likens this world to a great tablet on which each strives to have his name inscribed. When the tablet is full, we must perforce rub out the names already written there, to make room for new. We are now trying to put new names and new works on this tablet, knowing well that taste is a thing "varium et mutabile," that our successors (not to say our contemporaries) will hardly approve all our choices. They will have plenty of leisure to rub out all names and write in new ones. Time itself will efface our works; human constructions are ephemeral, and those that we raise more so than others, for they grow more and more complex.

Let us console ourselves (a little cynically if you will), with Fontenelle's closing reflection: "What would this world be, if the monuments of the Ancients perished not? The moderns would have no room for theirs."

The beginning of the nineteenth century does not at first glance appear to be a date happily chosen to mark the advent of modern architecture. "Modern history," by the common consent of historians, begins where "medieval history" leaves off: toward the close of the fifteenth century. Now, the same date marks a most important moment in the history of the art of our race. In architecture it witnesses the end of the evolution of Gothic style and its replacement, earlier in some, later in other countries, by an architecture that borrowed its forms, if not its methods of construction, from the ruins of the masterpieces of Rome, scattered through Italy and Occidental Europe.

Modern architecture really dates then from this period, since from this time on it is possible to follow the applications of principles of decoration called Classic through all times and all countries, without coming upon any break in continuity comparable to that which marks the passage from Gothic to Renaissance art.

But in this sweep of five centuries it is convenient to recognize subdivisions. The system most widely adopted studies under the name Renaissance the works that represent a sort of transition from the traditions of the Middle Ages to the art called Classic, which found its mode of expression toward the end of the sixteenth century and has held absolute reign in Europe ever since. We may except from this generalization certain attempts to return to the art of the Middle Ages, with which reversion we shall have to deal later.

Just, then, as the manuals of history have pretty generally adopted the custom of setting aside the half century or so preceding the period at which they are written as "Contemporary History," so the history of art has established a sort of arbitrary frontier between the first part of the nineteenth century and "our days." On this side of the frontier, because we are in a territory still aflame with controversy; because it is difficult to make a choice among the mass of works still standing; because men are rarely great men for their contemporaries, historians generally content themselves with giving a dry enumeration of some important works, a very few names and a short commentary inclined to be pessimistic in tone. All of which is perfectly legitimate, particularly in view of the part played by the arbitrary in any presentation of this kind.

In the present work, which seeks to develop "the appreciation of art," it is natural that more stress should be laid on the contemporary period, since the first object of such an undertaking must be to give to the reader some basis on which to form his comprehension and judgment of the works around him. It is necessary then to lay more emphasis than

usual on the historic motives that influence the work of today, running the risk of exercising something less than that impartiality which would be desirable in a treatment of history that aimed at formulating final judgments.

And then, in formulating judgments on contemporary art that do not wait to become and do not pretend to be "final," we are perhaps showing a certain wisdom. "It is not easy," writes Anatole France, "to form a general idea of the things in whose midst we live. We lack air and aloofness. Even if we manage to make out something of what is nearing completion, we are still in confusion respecting what is just beginning. This is the reason, no doubt, that the most indulgent minds have been severe on their contemporaries. Men are inclined to think that the world will finish with themselves, and this thought, which they express with a certain melancholy, is their secret consolation for the finitude of their days. I am rejoiced in my heart that I am free from so vain and so pitiful an illusion. I do not believe that the forms of beauty are exhausted and I await the appearance of new ones."

It is in some such mood that our volume ventures to address the present chapter to the period that includes under the name of modern architecture pretty much all of the nineteenth and the first years of the twentieth century.

The first inquiry we may expect to meet is, what is modern architecture? An old story tells of a countryman at the circus, who, on meeting the giraffe, exclaims: "There ain't no such animal." We have some reason to fear a like reception for our modern architecture. And yet, countrymen to the contrary notwithstanding, there *are* giraffes. A century that has built as vastly as the one we are studying *has* an architecture, whatever the critics may say. This may seem to be a platitude. It *is* a truth, too little known. It is without example that a period which has built much has built nothing worthy of attention. A country in which the steel industry is highly developed comes to make wide use of steel, then pro-

duces engineers more and more skilful in the handling of it. These in turn perfect metallic construction, advance the science of its application and develop new methods. Just so, activity in building brings with it an ever-increasing perfection both in plan and in appearance. The holes in the history of architectural growth are those periods in which economic dearth, wars, invasions, have here and there reduced to nothing the industry of the builder or at least prevented the undertaking of any important enterprise of construction. At such times use is made of what already exists, or only such temporary structures are attempted as leave no remains.

Put aside for the moment the question of modern work — is there in all the world a single town in which ancient monuments have been preserved that we think not worth the trouble of being visited, reproduced in books, commented on. Of course we are excluding the matter of personal preference. It would seem necessary to do so, for otherwise we should arrive at the paradoxical result that there is *no* architectural product worth looking at, for every epoch, every edifice has had and will always have its detractors. But the very fact that works of art are disputed about shows that they exist and that they live.

If in a book one finds that the author passes in silence over a century or two of the art of a given country, on looking a little closer one may make out one or another of these reasons for his silence: either the author betrays a personal dislike for the kind of architecture that was in favor at this moment and would fain suppress it by not talking about it; or else there really were no works to be studied. Perhaps an author will be silent on the whole subject of Italian art in the seventeenth century, on the ground that the Barocco has no place in the history of art, that it is a decadence. Or even (as in the case of an author of merit, but one blinded by the taste of his time)[1] we may come upon such passages as this:

"In almost all Europe, the history of architecture up to

[1] Quatremère de Quincy, *Biographies des Architectes Célèbres.*

the sixteenth century presents nothing but emptiness, and this historic emptiness is what is called the reign of Gothic Art."

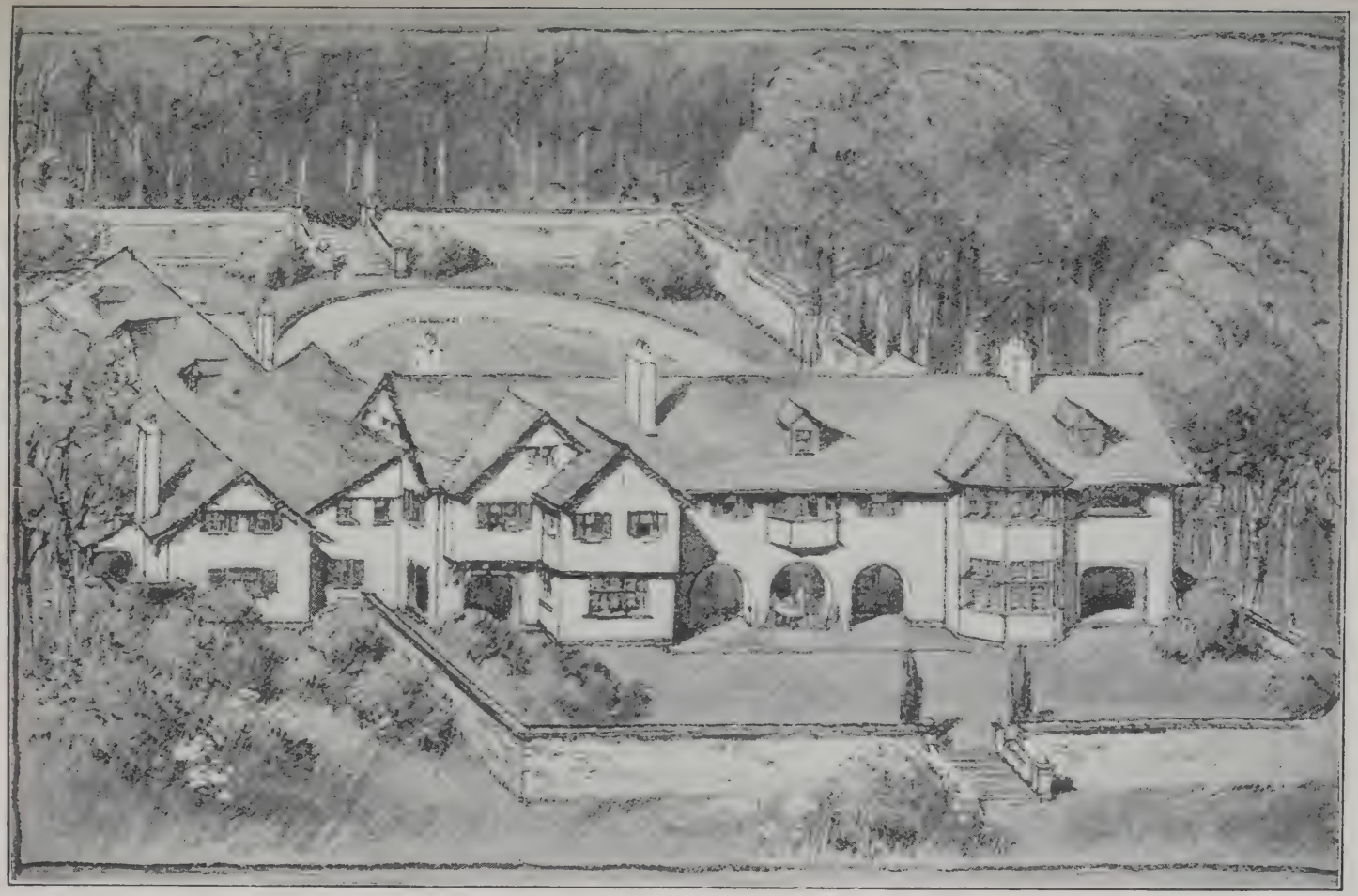
A few years, and the wind will have veered completely round, the pendulum will have swung to the opposite phase. A Viollet-le-Duc, only one among many, will write that art died in France with the passing of the Gothic, as for the Italian Barocco, Geoffrey Scott[1] will say:

"If decadence means anything at all, it stands for loss of power, loss of self-confidence, loss of grip. It is a failure of the imagination to conceive, of the energy to complete, profound experiments — a wasting away of inherited capital no longer put to interest. The baroque style is the antithesis of all these things. Whatever faults it may have, these are not they. Intellect in architecture has never been more active; the baroque architects rehandled their problem from its base. Where the Brunelleschian architecture and the Bramantesque were static, this was dynamic; where those attempted to distribute perfect balance, this sought for concentrated movement. The expectation of repose, which there had been satisfied at every point, was here deferred, suspended to a climax. Architecture was considered, for the first time, wholly psychologically."

For those who have been able to free themselves from the influence of such prejudices (found too frequently in a history of art written with more of sentiment than of judgment) let us repeat it — the only periods without interest are those in which nothing has been built.

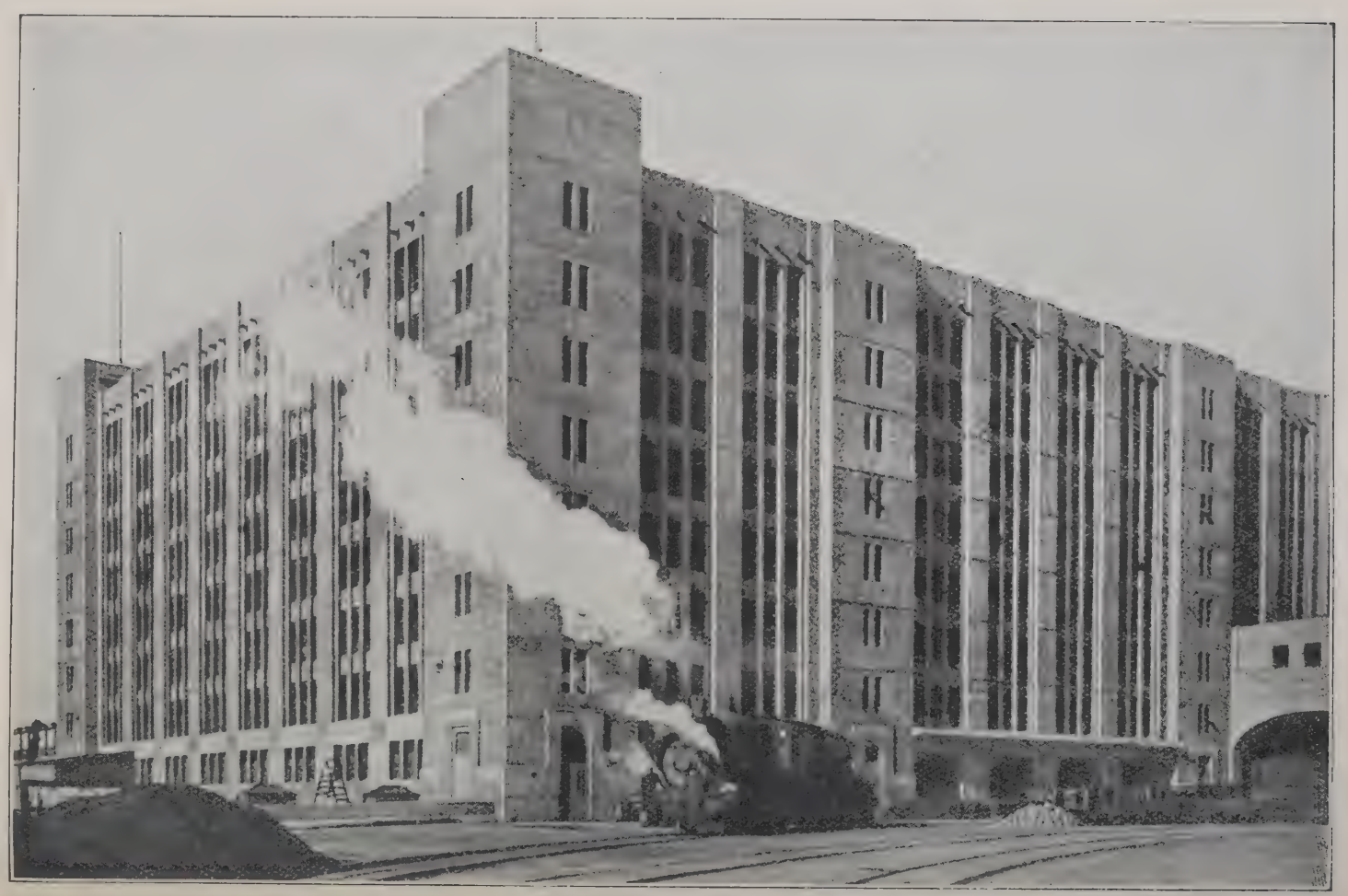
For example, the years that followed the barbarian invasions and that witnessed the fall of Rome were years of general misery throughout the world. They left nothing behind them and consequently have nothing to offer the historian of architecture. Again, the fourteenth century in France, ravaged by the wars with the English, has left little;

[1] *The Architecture of Humanism*, a book where the most delightful and penetrating criticism of some fallacies current in history of architecture will be found.



DESIGN FOR A HOUSE AT LITCHFIELD, CONNECTICUT

PLATE 66



UNITED STATES ARMY SUPPLY BASE, BROOKLYN, Cass Gilbert, Architect

Spain, from the seventeenth century to modern times, is barren. But in all these cases, "to have left little" means there is little left to pass judgment on, favorable or unfavorable. When, on the other hand, we come to modern architecture, there is no lack of construction. The only reason for not analysing it must be the personal distaste of the writer, and where judgment is thus personal it is sure to be challenged by the "next man" or at least by the next generation.

Whence comes it that modern architecture receives so little attention outside of professional journals, or, when it is spoken of at all, is so unfavorably judged? It comes first of all from a confusion in the mind of the critic of architecture with architectural setting. A lack of originality in this decorative setting convinces the critic that there can be nothing of value in the work. As for the "general public," on the other hand, it is difficult to convince it that there can be any other architectural setting than such as might be taken complete from some "style" of the past. For it, a modern edifice is either "Gothic," or else "Greek," or else does not exist — architecturally speaking.

What is the value of the first, and most serious reproach made against the architecture of our time — "lack of originality"?

A stroll through the streets of a modern capital, or through the grounds of an American university, brings us upon buildings whose exteriors have been more or less happily inspired by suggestions from every period since the times of the Pharaohs, taking in by the way Greece, Rome, Romanesque monasteries, châteaux of the Loire, Colonial residences. Have we then been looking upon Egyptian temples, the Parthenon, Chenonceau, Homewood? No, even if the copy is fairly faithful, there is not an eye ever so little trained but would detect the modernisms. If we made this excursion in the company of an architect of any cultivation, he could tell us to within twenty years the date at which these edifices

had been constructed, simply by a superficial examination of the façade.

If then these buildings bear the mark of the period (a matter absolutely beyond doubt), we shall have established our first point, which is, that even this decorative setting of the exterior that has been disdained as unoriginal, has a personality permitting one to distinguish it from the work of any other period. Look at the buildings erected from 1860 to 1880. Do you not recognize them at first glance? And yet, if you read the art criticisms of their time you will find these insisting that what was being done then was no more than a copy of past styles.

This criterion of judgment, which would put beyond the pale of art, works whose detail is not absolutely original, would carry us very far. Were we to accept it, we should have to reject the Romanesque art, in which the Roman detail is always easy to detect beneath deformations due to numerous causes that we need not analyse here. We should have to reject the Italian Renaissance with its Roman orders, Roman art with its Greek forms, Greek art. . . . But perhaps we had better stop here, for the origins of Greek art are still but little known and the critics, until archaeological discoveries shall have demolished their frail edifice, may admire without fear something of which they have the satisfaction of not knowing the sources.[1]

In carrying further our study of the elements that enter into architecture, we perceive more and more clearly, how puerile it is to base our judgment on the single criterion of originality of detail. Even in this matter of decorative setting, modern architecture has a character of its own; whether as the result of the architect's choice or of his awkwardness

[1] Fergusson, in his *History of Modern Architecture*, was contented with placing that moral boundary at the sixteenth century: "There are in reality two styles of architectural art — one practised universally before the sixteenth century and another invented since." Needless to say that this latter style is what he calls: "copying or imitative style."

matters little. But let us go further and seek to explain why we cannot mistake a modern building for an ancient.

Every building has a practical purpose, whose demands must be met. If what is wanted is a bank, the operations to be conducted in it must determine some of its arrangements: ease of access to the public; space accorded to dealings with the public; distribution of the working-room and apparatus of employés; office accommodations, etc. This is what the architect calls the *Program* of construction. This program varies with the importance of the establishment, with the specialty of its interests, etc. There will then be a great variety of banks and some will serve their purpose better than others. The really modern bank will be that which best meets "modern banking requirements." An element of criticism somewhat different from that which confines itself to an examination of the exterior, and one which, taking into account the evolution of programs, makes it impossible for a modern building to be a "copy" of anything ancient.

Now let us look at this same building from another angle. The bank may be constructed in Florida or in Canada. The difference of climate sets problems of planning that constitute what are called "*natural*" or "*geographical*" conditions. The bank may be erected in a city like New York or in a small country town. In the former case it would have to satisfy the requirements of an intense commercial activity, of a clientele accustomed to luxury, of a center of enormous financial resources. In the latter case, the opposite of these conditions would prevail. These "social conditions" impose upon modern construction a range of variation quite beyond any that the mere choice of ornamental style is subject to.

But this is not all. There are also the "*human conditions*." The bank is conceived by the *architect*. He is confronted by certain requirements furnished by the *client* — say the bank president. To carry his conception into execution he must have recourse to the *workmen* of twenty trades. Now the architect is a man of his time, with its dominant ideas, its

predominant tastes; but he has also his own personality, delicate or crude; he has received an education, elaborate or elementary; he has his artistic gift, exceptional or mediocre; he has his nationality — and the qualities of his race. The client, on his side, is possessed of certain ideas dear to himself, though perhaps they would make his son smile. He will impose these on certain purely artistic decisions that he would do better to leave to the competence of his chosen architect. The contractors and workmen, finally, will bring to the execution of their task an echo of their state of mind, of their economic condition, of their individual education. Their work may be done with patient care, with the love of the cathedral builders, or with feverish haste, inspired of nothing but an interest in the wage. All of these human factors will make themselves felt in the finished work, and, in so far as they differ with the time, the work of our day must differ from that of even fifty or a hundred years ago.

Finally, *technical processes* change. The materials of one period are not those of another. The invention of a method for turning out large panes of glass will change the shop front. Development of the steel industry will permit the construction of skyscrapers beyond the height of our fathers' vision. Woodwork, turned out by machinery instead of by hand, will permit entirely new effects. All of which brings it about that an edifice of the twentieth century can resemble only superficially a structure of the eighteenth.

To study understandingly the architecture of a time, we must then consider

The legacy of the past — that heredity which makes itself felt through all innovation.
Influence of contemporary theories.
Physiognomy.
Conditions of production:
- Natural conditions.
- Human conditions.
- Technical conditions.

The programs.
Architectural setting. The decorative forms of the whole and the detail.
Local schools.

It is this order that we shall follow in our present study.

II. LEGACY OF THE PAST

Close of the Eighteenth Century

Every human effort is the resultant of the efforts of all past generations. There is then a sense in which the entire architectural development studied in the preceding chapters dealing with Antiquity, the Middle Ages, the Renaissance has left its mark upon all that we are about to examine. Classic medicine was fond of saying that nature does not move by leaps. No more does architecture: it is a slow evolution that transforms by imperceptible changes the fashion of a moment. Even when a new importation so profoundly modifies a prevalent manner as to give to the superficial observer the impression that a revolution has taken place, one finds on studying the fundamental elements (arrangement of place, method of construction, general composition) that only slight differences distinguish the new mode from its predecessors.

It is then important to review the architecture in favor at the end of the eighteenth century, in order to recognize modern architecture's point of departure. We find, of course, throughout the nineteenth century returns to periods older or more exotic, for every art feels at moments the need of renewing its inspiration. But these appeals to the new-old seldom pass beyond the measure of a passing fashion. The traditional background, that is to say the legacy of the immediately preceding generation, is the firm fabric on which the new arabesques are embroidered. The history of letters offers typical examples of this same principle of heredity.

A certain amount of scepticism is not misplaced in ac-

cepting the claims of those schools that pride themselves on catching up traditions lost for four or fifteen centuries, leading art by the hand out of those shadows in which during this long period she has wandered bereft. Not only do such pretensions lack something of modesty; but they forget that the imprint of the intervening centuries is not as easily effaced in fact as in wish — even if it were desirable to efface it.

Toward the end of the eighteenth century, architecture is absolutely Classic. Thoroughly trained in the use of the antique orders, it had acquired a sense of proportion, of measure, of rhythm, such as has never been surpassed since that time. But it had paid for this skill by the loss of a good part of the originality which earlier times enjoyed.

A scrupulous care for purity of form confines fantasy within very narrow limits and devitalizes that creative force which threw itself into the freer and more vigorous ornamentations of earlier periods. This combination of perfection of proportion with conventionality of ornament is apparent in all the masterpieces of the time (witness the edifices of the Place de la Concorde at Paris, 1753, the Petit Trianon, the architecture of classical England). And the tendency grows more marked with the years. Simplicity begins to turn to coldness (witness the Palais de la Légion d'Honneur, the Madeleine), while across the Channel, Soane's Bank of England is successor to the work of the Adams. The spirit of a time that culminated in the French Revolution encourages this tendency. Roman simplicity is the order of a day that had thrilled to the discovery of the ruins of Pompeii, and was ready to sacrifice the most elementary principles of common sense to the forcing of Roman façades on buildings that could not be Roman.

And yet great results had been accomplished, results which passed into the nineteenth century in a form so perfect that they called for almost no modification. Of theatres such as Louis erected at Paris (Ancienne Comédie Française) and at Bordeaux, the one is still in use without modification;

the other was in use until destroyed by fire in 1900. The general features of the theatre at Bordeaux inspired three quarters of a century later the author of the Opéra at Paris (Charles Garnier). So, too, the art of city planning found formulas to which our time has added nothing. Great groupings as at Nancy, as at the Place de la Concorde, as in the Washington plans by L'Enfant are still the models of our most recent conceptions. The plan of domestic dwelling, especially in France, succeeded in expressing perfectly the elegance and sociability of the eighteenth century. In the more modest type of house the Georgian or Colonial architecture is still usable and is used in our time with but some improvements in the housekeeping arrangements.

A fact important to note is that the few traces of the Gothic traditions still to be found in the seventeenth century have entirely disappeared at the end of the eighteenth. Classic art has completely triumphed and, when later on there shall appear what is called the "Gothic revival," it will be necessary for it to learn, as one does a dead language, the art that was the universal expression of the Middle Ages. There will appear the inverse of what we witnessed at the dawn of the Renaissance: the first essays at "revival" will be awkward attempts to use a few archaeological Gothic forms in compositions still quite classic.

To recapitulate, the artists of this period, subjected to the severe discipline of Classicism, acquired in the school a mastery of composition and a command of form, the beneficial influence of which will be long in disappearing. If they were too servile to rules and too given to following those intellectual movements that produce a literary architecture or painting, instead of just architecture and painting, yet they knew their métier and had such taste and such sureness of touch that the elegance and distinction of their work, often imitated in the following century, are for the copyist what contact with cultivated people is for those who are less so. The influences then dominant were Italian and French, the

former sensible in England and in Russia, the latter throughout the rest of Europe.

III. INFLUENCE OF CONTEMPORARY THEORIES

Taine, in his philosophy of art, has accorded first place among the circumstances that give to the art of an epoch its characteristic form to that which he calls the general state of mind of the time. We shall see later, in studying what we have called "human conditions," the influence of manners and customs on the architecture of the nineteenth century: the general state of mind of the times permeates its theories of art.

At the beginning of the century the idea which exercised its influence on art in general is a return to antiquity more absolute than that which inspired the centuries from the sixteenth to the eighteenth. These earlier times had retained a large measure of local tradition and above all a sort of common sense which adapted architectural composition to the custom of the region and to natural conditions.

But theorists are uncompromising. They seem at the moment of which we speak to have gained an ascendency over the artist that made him forget that architecture is not a stage-setting, and that a construction must before all else be the solution of a program of its time. The ideal of the time was that of a sort of abstract beauty that took little account of practical necessities: it forced willy-nilly into the envelope of an antique temple a Christian church (the Madeleine in Paris), a stock exchange (Paris), a college (Girard college, Philadelphia). The ideas of Rousseau and his ideal of primitive simplicity were interpreted to mean an abjuring of all that was left of grace in the art of the expiring eighteenth century. Gardens must become "informal" and, that they may be the nearer to nature, are scattered about with ruins affording delicate sensibilities (and it was the fashion to have

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THE CITY HALL, PHILADELPHIA

sensibilities) an excuse for declamations flowering with beautiful sentiments. The façades become severe, almost without ornament save some motives borrowed from antiquity. Nothing is simpler than a bare wall; let us then eliminate windows and save the interior from darkness by the use of skylights, at once depressing and inconvenient.

The period of the wars of the Revolution and of the Empire, times little propitious to production, the disappearance from France of an aristocracy of name or fortune, patrons of art, and finally the ideal of austerity that reigned, all this had for its first effect the destruction of those schools of designers, ironworkers, decorators, who had softened the rigidity of the art of the eighteenth century. When, later, the wind veered and it was once more admitted that architecture might be amiable without being unchaste, it was too late: craftsmanship had suffered a deterioration only too visible.

As though the Roman architecture were not severe enough, toward 1820 comes the Greek revival. It is then the "Antiquities of Greece and Rome" of Stuart and Revett (published as far back as 1762 to 1794) becomes the bedside book of every architect. The change is altogether on the surface, to be sure; only the cross-section of the mouldings is modified, the sense remains the same. For as we said before, it is easy to change the dress of an architecture; to alter its spirit is quite another matter. Greek detail, till this time little known, has its turn at popularity — that is all.

At the same period as the Greek Revival, enters another current which, if it was slower in making its influence felt, held it the longer, and has had its adepts down to our own days. It is the Gothic Revival.

The Gothic Revival begins to show itself in the first quarter of the century. In France, its first period is called the Gothic Louis Philippe (1830 to 1848) and although it has left quite a number of monuments, it never could storm the stronghold of the official architecture, classical fortress

confided to the care of the Académie des Beaux Arts. In England, on the contrary, there is a sort of inaptitude for the understanding, or at least the expression of the essence of Classicism. It was natural then that the Gothic Revival should find readier entry into Britain than into France. It imposed itself on the most important public building of the time: the Houses of Parliament (1840).

To tell of the battles of the Classicists and the Gothicists would be a long story. They have their parallel in the conflict between Classicism and Romanticism in literature, and when one has stripped the claims of the Gothicists of all that is mere phrase, one sees that the Neo-Gothicists are none other than the Romanticists of architecture. This in no wise implies a reproach, for in France, for example, the head of the Romantic movement, Victor Hugo, furnished the principal contribution to the French literary history of the nineteenth century. In any country there are always artists reluctant to appreciate that effort toward harmony of form which is the mainspring of Classic art; unwilling to submit themselves to the discipline that it imposes; preferring the picturesqueness, the random character, the complete liberty of expression of medieval art. This is a natural consequence of the diversity of the human faculty, and far from condemning such tendencies, we ought rather to congratulate ourselves that all minds are not cast in the same mould. In earlier days, there was too much uniformity of doctrine and heretical tendencies were only too promptly suppressed. In the nineteenth century every opinion "got a hearing."

But the revival of Gothic architecture — was it possible at the moment when it was attempted? Is it now? That is another question.

If the principles previously laid down (and which we shall develop in the course of our study) are sound, only one conclusion is possible.

An architecture dead for three or four hundred years can know no resurrection. Too many things have been learned

and forgotten in the interval. A civilization can, no more than an individual, efface the stamp of the years, even were it to feel that the ideas of its youth were preferable to those of its riper age. A return to Gothic architecture would presuppose a complete revolution in the conditions of modern production. Gothic art was above all things an art of craftsmen. Either social conditions must so change as to permit the ancient guilds to flourish once more, or the Gothic Revival is condemned to be nothing but a very remote imitation of the art of the Middle Ages. This was very well understood by Pugin or Viollet-le-Duc. It is understood by the present leaders of the American school — who put at the head of their program of restoration a revival of the arts-crafts. They see, too, that to have a chance of enduring as more than a passing mode, the Gothic Revival should continue the tradition of the Middle Ages, which is that of every art worthy the name, that is, instead of simply returning to the forms of the thirteenth century or of the fifteenth, they should aim at evolution and endeavor to adapt their forms to modern life, rather than blame our customs for not accommodating themselves to the forms of a past age.

Up to the present this has been the weak point of the school. The only works in which the Neo-Gothic art has been employed with success are those whose program is either as old as the Middle Ages or has at most evolved but little since then: churches, collegiate buildings, domestic architecture. The essays in modern public buildings are on the whole rather feeble.

Toward 1850 to 1860 the Gothic Revival attained its apogee. Fashion was with archaeology, from which was hoped that rejuvenation which only an insight into the future can give, not a backward glance into the past. It was the epoch of restorers, who ruined many a monument of the Middle Ages under pretext of recovering consistency of style.

About the same time, the middle of the nineteenth century, we find in the art of some masters the most fruitful

results of Classic tradition. Their work rises above a general production mediocre and bewildered by a confusion of currents.

The attacks of the Neo-Gothicists against Classicism had created a desire to replace it. We find essays in different directions. Some may be taken as anticipating the "Art Nouveau" of the end of the century. Others came from the "rationalistic school" of Viollet-le-Duc and de Baudot, seeking to deduce an architecture from the necessities of construction. M. Louis Dimier has very well said: "The necessities of construction, even supplemented by what M. de Baudot calls economic and social necessities, will never suffice to build an edifice. For of course these ideas have only a limiting and corrective value; they are not creative and fruitful. What *is* fruitful is the conception of form: it is design, which emanates neither from geometry nor from mechanics, but from the imitative arts."

What is here to be understood by "the conception of form," by "design," is not merely decorative vesture, but that conception of the whole effect which shall best express the program, the predominance given to this or that part of the building; the *manner* of decoration rather than the choice of decorative motives; general proportions; relations between different parts; in a word all that constitutes the *composition* of a building. A logical use of the materials has evidently its value, but a very limited one, and logic is not of the creative force the rationalists took it to be. It is a factor in composition, it is not the whole art. Just at this point the art of the architect divorces itself from that of the engineer.

To complete our rapid review of architectural theories, we must mention those that filled the last years of the century.

In the private house, particularly the country house, villa, suburban house, appeared a new motive in complete discord with the ordered ideal of the past: it is the love of the pictur-

esque. The lines of the edifice are inspired by the naïveté of rustic constructions of earlier times, of the cottage, of the effects due to successive additions that were not held to any unity of plan as an art arrived at its full development understands plan. We saw a first symptom of this tendency at the end of the eighteenth century, when Marie Antoinette tucked quite a little hamlet into the garden of the Trianon — a group of rustic affairs arranged without any apparent order in one of those gardens meant to reproduce effects in which art has had no part. Then, as today, the rock on which this conception most frequently splits is hard to avoid. Full of charm when entrusted to an artist of taste, there is danger that in seeking the naïve it fall into affectation. Men who are sophisticated, because they live in the midst of sophisticated production, always find some difficulty in imitating the work of the simple country builder. If this work of imitation be not perfect, it falls only too easily into the ridiculous manner of those of too ripe years who take to "baby talk" to cast illusion about their age. The affectation of simplicity is no less trying than the affectation of intellectuality. In art, as elsewhere, no maxim is safer than "Be thyself."

The nineteenth century witnessed also the development of archaeology and of travel. If this fact cannot be classed among theories of art in any absolute sense of the word, yet it is the manifestation of a state of mind that has its important bearing upon the present mentality of the artist. Archaeology, in its effort to revive past civilizations, not only has its seduction for the intellect interested in all things historical, but, by the publication of works illustrated with the results of these researches, it puts within reach of the public a whole repertory of forms, to borrow from which is a sore temptation. If our ancestors, knowing little of preceding epochs, had a tendency to darken their character, we on the other hand, knowing them better, are given to admiring them to the disparagement of our present production.

From this has resulted a certain sterility in contemporary work, at least in the domain of form. The architect has in his library more information than was ever dreamed of by the artist of the Renaissance, who studiously copied the rare fragments of antiquity then known. He uses this learning and passes its influence on to decorators, to designers of furniture, of wall-paper, of lighting apparatus, who all try to harmonize their production with the "chosen style." It must be said at once that this choice is often forced by the client. The fortune-favored class of a country is traveled. It has admired the monuments of the past — the old châteaux and palaces of France. It has felt the mystery of cathedrals, the gayety of sunlit Italian villas, the intimate charm of an English manor. When it comes to ordering a new work, these traveled clients would like to make the pleasure they have experienced live over again. They ask that the old air be repeated for them, rather than that the unknown be tempted by giving free play to an architect's personality, unapproved by the prestige of old masters.

All the taste of the last fifty years is impregnated with these archaeological influences. There have been, however, numerous attempts at emancipation. Some, in a manner less sensational but more sure, borrow from the past what it may hold in the way of lesson and example. They are content to add their particular stone to the common edifice of our modern civilization. Others, more revolutionary, preach the repudiation of the entire legacy of the past and set out on the conquest of a new art, carrying nothing on the expedition but a mind virgin of memories. One sees at once the weakness of this counsel. We begin over again in art no more than in any of the other elements that make up a civilization. Its customs, its morals, its political and legal institutions are beyond our recovery. Indispensable to the new beginning would be such a cataclysm as would destroy all that we have won (our art, our books, our very memories) and restore to us a world in such a state of nature as prehistoric man en-

joyed, with caves for dwellings and unspoiled walls fresh for new adventures in painting.

If it were only question of a new style of architectural decoration, we have already shown that this would affect but one element in architecture and the decorative arts. To pretend that it is the creation of a "new art" is, to say the least, an exaggeration, or a self-deception. But it is well that our ambition should look higher than arm can reach. "Ah, but a man's reach should exceed his grasp or what's a heaven for?" Not all the effort of the modernist has gone for naught. No more than any effort at once sincere and disinterested can be all vain.

There remain to be mentioned essays in sculpture and painting of more radical vision than those of the "Art Nouveau." For these it is no longer merely a question of a new method of decoration: what is demanded is a repudiation of the accumulated science of the centuries which, naturally complicated, is now declared to be artificial. With the disciples of Rousseau one turns to the primitive man, unspoiled by civilization. All the technical art of drawing is set aside. Perspective, modeling, fruits of long experience, that sum up the efforts of centuries in the interpretation of nature, are renounced that one may come to look upon her with new eyes. As in every movement, two parties represent this tendency: a conservative, that contents itself with a return to the archaism of the primitive, and a radical, that rejects all precedent. The latter party is again split into a number of little sects: the cubists, the futurists, etc. Architecture, slower in its transformation than painting and sculpture, shows as yet no well-defined tendencies in this direction. Yet we may note in some countries works in which some such state of mind makes itself felt, and it was necessary therefore to allude to the movement in closing this brief sketch of the period that we are studying.

IV. PHYSIOGNOMY OF MODERN ARCHITECTURE

What first strikes one who compares the architecture of the nineteenth century with what went before, is the abundance of its reminiscences, the variety of its tendencies, and the complexity of its production.

Modern architecture is fifteen centuries old. For during all this long stretch of years there have occurred no such radical changes as that brought about by the barbarian invasions toward the end of the Roman Empire, which ploughed the antique soil with such deep furrows that Christian art, when it did spring up, had an almost empty field to grow in.

The first consequence of this long period of almost uninterrupted development is that an enormous quantity of forms, of types of edifices and of tradition has accumulated. If we add to the mass of edifices still extant, those of the most remote times and lands with which archaeology has acquainted us, one can readily understand that modern architecture, drawing on so many sources, can hardly present the unity of an art nearer to its origin or more isolated from foreign intervention. We have just enumerated the diversified influences of the past and the conflicting theories of the present, making a wealth of intellectual resources that in architecture as elsewhere may stand in the way of the most direct solution of new problems. There remain to be said a few words concerning the causes that make it impossible for the problems of our architecture to be as simple as the architect's problem used to be.

The fundamental reason is plain enough. This architecture is the product of a very advanced civilization. Now every civilization in the measure that it betters conditions of life is obliged to create for this purpose a machinery more and more technical, more and more delicate. To every advance in comfort corresponds a greater and greater complexity of machinery, of which truth architecture is the clearest demon-

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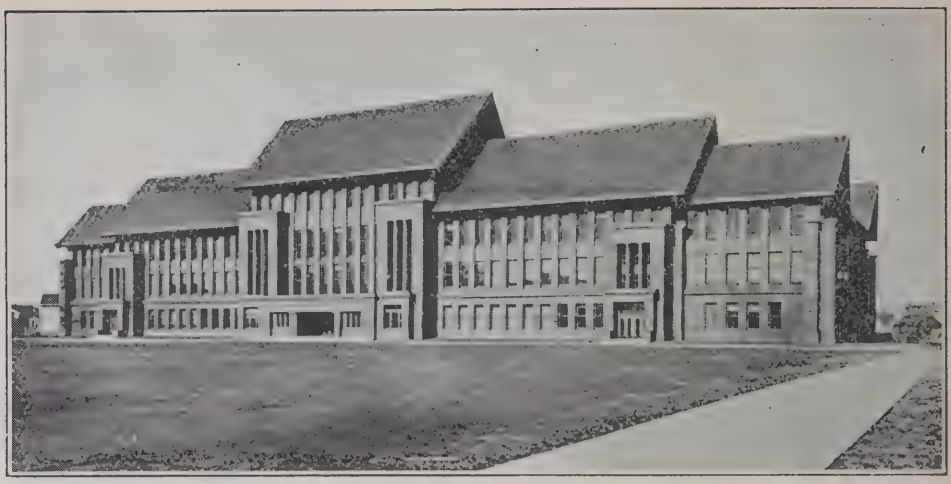
PLATE 70



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1. CARL SCHURZ HIGH SCHOOL, CHICAGO
2. DINING HALLS, PRINCETON UNIVERSITY

stration. If our means of transportation improve, it follows necessarily that our railroad terminal becomes an edifice far less simple than the stables in which the great formerly lodged their travelling horses. The châteaux of the Middle Ages gave to their lords a degree of comfort with which the humblest household of our day would not be content. Their great room, which was at the same time reception room, dining room, bed room, gave place by slow transformations to a whole series of rooms, corridors and baths which we deem essential, but which over-complicate our plans.

Modern architecture can then no longer aspire to the simplicity of the Antique or of the Medieval. A modern plan provides a multitude of rooms for various uses, distributed generally over several floors, and the external and internal appearance of the building faithfully renders this complexity by the number of openings, of stories, of reduplications of apartments on each floor, etc.

We may say that the more modern a program is, the more complicated it is; and we cannot speak of this complexity as of a fault chargeable to the architect, when it is only the expression of our use and custom. What was the library of the Renaissance? A simple room or gallery containing a few cases for the reception of manuscripts or books (*e.g.*, the Vatican library). Compare this simple plan with that of a modern library such as the Congressional at Washington, the Nationale at Paris, or the New York Public Library, and we must realize that it is a mistake to apply the same standard in the two cases and to deprecate in the modern work the lack of that simplicity its prototype enjoyed.

We were speaking of means of transportation and their development in the last fifty years: these have brought about transformations which give another characteristic to our architecture. The intercommunication between country and country is so easy and so continual that the interchange of ideas is constant, and local schools tend more and more to disappear. Whereas in the sixteenth century

the aspect of building changes from one town of Italy to another, in the nineteenth it is only between country and country that one notices very marked difference of plan and elevation. The nearer we come to our own time the more attenuated become even these differences, and one may say that instead of regional schools (*e.g.*, of Normandy, Auvergne, the Rhine), and instead of national schools (English, American, Japanese), we are moving toward a cosmopolitan architecture. It is the equivalent in architecture of that tendency toward uniformity which brings it about that people dress in Tokio pretty much as they do in Madrid or Munich.

Whether this makes for progress in art is contestable enough; at the moment, we are merely noting the characteristics of modern art, distributing neither praise nor blame, which would be a sufficiently futile pastime.

We shall turn later to the study of the modern program. But already we may see that its most interesting characteristic is that it is meant to meet the needs of the mass of the people. We speak of course of new programs. Others enter into modern art only in the quality of "survivals." The Gothic architecture had for client the congregation of the faithful, the lords (military power) and the assembly of the burghers (civic power). It gave to these the cathedral, the château-fortress, the hotel de ville. The architecture of later customs created the royal palace, the residences of the rich. Our architecture is concerned primarily with satisfying the needs of its new master, the democracy, by producing administrative buildings, hotels, railroad terminals, commercial buildings, hospitals. To this architecture for the people, the necessity of space for rapid circulation and of facility of access gives a character hitherto unknown. One might add that, the state giving its citizens better assurance of security now than at any time since the fall of the Roman Empire, constructions may open more freely on the outer world than when men had to think of defending themselves by their own resources.

This art of the democracy has necessarily the defects of such art. Neither originality nor refinement, peculiarly the demand of aristocracy, will be required of it. Its magnificence will sometimes be tawdry, and the rapid shifting of fortunes must bring it about that the builder will aim at speed rather than at permanence of construction.

Toward 1850 Leonce Reynaud wrote in his treatise on architecture: "From the point of view of durability it is true that architecture is perhaps of less worth today than ever before. Seldom do we give to our buildings the excess of solidity which is necessary to make them pass on to a very remote posterity. We are sure that our memory will not perish with them, and, more enlightened than our forebears by the teaching of history concerning the revolutions that take place in the customs of peoples, we know that the uses we have in mind in construction will no longer be those of our descendants after a few generations. More skilful constructors, better economists, we employ our efforts in a manner more profitable: we find immediate satisfaction for a greater number of wants, and we leave more wealth and happiness after us. We have then no occasion to blush for our epoch, when we compare ourselves on the score of solidity with the builders of Egypt or of Rome. What we lose in duration, we gain in extension, and architecture as we practice it, if it is less monumental, is certainly not less useful nor less worthy of our meditation. None of our arts exposes its productions in so many places and in so great evidence; none of them exercises on us an action so incessant, nor perhaps so profound; none has so pronounced an influence on public prosperity nor absorbs so large a part of human activity."

There is perhaps something too much of complacency and optimism in this point of view; but we so constantly hear the other string harped on that it is not without purpose to oppose the reflections of Reynaud to those who know not how to praise the past save by unjustly disparaging the present.

In résumé, modern architecture has its own character and

it is impossible that it should be otherwise. The greater facility that it has enjoyed of knowing the works of the past leads it, it is true, to borrow much of its ornamentation from all sorts of works and schools, but some artists have known how to resist this temptation.

It has experienced contrary tendencies in this riot of opinion we call the nineteenth century. Instead of evolving normally without sudden shocks, it has too often proceeded by accesses of infatuations, that make it burn today what it adored yesterday. Now, it has been said of transformations of language: "Health in a language consists in its leaving its origins behind it without violence." This is equally true of transformations of architecture. It is then certain that "revivals," "manifestoes of independence," have done more harm than good.

The nineteenth-century architecture appears sometimes too learned in composition and insufficient in pure artistic culture, that is to say in that culture which will know only Beauty. Very rich in new types of building, for those types whose program was already found in the past it has contented itself with repeating, save for a few details, the solutions of the past. This is the case, for instance, with the churches, a theme on which past centuries had spent their best effort. One would say the effort to meet new programs had absorbed all its creative force.

It has tended to weaken more and more the variety in local color that used to be, and to replace it with a tiresome monotony.

The great contribution of this art of the democracy is the building for common use. With this may be associated its work in the beautifying of cities (see chapters on "City Planning" and "Landscape Architecture"). This work has transformed the appearance of cities, and it must not be forgotten that it is the work of architects. It is the architect, too, who has contributed most to the development of the art of furnishing (see chapter on "Industrial Arts").

V. CONDITIONS OF PRODUCTION

1. Natural Conditions

Except for slight variations due to national temperament and habits, modern architecture is pretty much of a kind the world over. There still exist some countries possessing a marked architectural character very different from any that has sprung from the traditions of Occidental Europe. Such are China, Japan, the Far East, countries which have played no speaking part in the architectural drama of the nineteenth century. They have for the most part clung to the indigenous models of the past, waiting the time when the tendency toward uniformity of which we have spoken, and which is already making itself felt among them, shall have completed the ruin of their local schools. As far as they adopt our civilization they adopt our architecture, so true is it that the two are inseparable. We shall not then have occasion to include them in our study.

The simple matter of geographical location tends then to lose its earlier importance as a factor determining the character of an architecture. The same is true of climate. We aim before all else to provide ample light and air for the apartment. If this enhances the difficulty of protection against cold, we give ourselves little concern on this score, for our age has solved a problem over which our fathers worried themselves continually, but to little purpose. They shivered in a house of the Middle Ages, they shivered in the Palais de Versailles, and it is only within the last sixty years that we have known how to heat either apartments or large buildings.

Here then is a difficulty the less for the architect. Moreover, the architect was formerly compelled to subordinate his composition to the materials that the country provided. There were schools of architecture using only brick, others only stone. Some in regions that produced only trees of slender growth were above all anxious so to arrange their plans that their building might not require timbers of large

dimensions. But what happened in the nineteenth century? Norway and Canada send their lumber around the world; we may, wherever we happen to be, obtain marble and building stone from Greece, Italy, France; steel from the United States, and glass from Belgium. And therewith another barrier has fallen. Not absolutely, of course; certain forms of building will continue to be more convenient than others in any given region, and consequently will be more widely used there. Porches, for example, useful in a country whose summer is very hot, are little appreciated in the northern regions where it is desirable to have the light enter directly into every room.

It would seem that this enhanced liberty, this greater independence of natural conditions must favor the creation of new works, and certainly one does find in the environs of any great city types of building imported from all points of the globe. But there is an obverse to the medal: it is easier to borrow, therefore there is less incentive to create. It is never altogether good for one to be able to borrow too easily.

For example, in countries barren of certain materials, the builder who sought to increase the dimension of rooms beyond those in traditional use, was obliged to invent an unprecedented method of construction. What he devised and arranged with art (for at that time the two processes were not divorced) gave a new and characteristic aspect to the building that enables us even today to class by periods the works of the past. The exclusive use of wood or of brick gave to the architecture of the Swiss chalet or of the town of Flanders a character that still charms. It would seem as though restriction acted as a stimulus. That stimulus has disappeared in the nineteenth century, and when one adds that any invention in the way of forms or processes of construction, instead of remaining the practice of a small region, is rapidly spread over the world by reviews, books, and travel, one may see that for form fostering originality, the annihilation of

distance, which is the gain of our epoch, is also its loss. It tends toward the disappearance of local schools, toward uniformity of production, toward lessening the incentive to invention and finally toward rendering architecture commonplace. Plans come more and more to resemble one another, the practice of one great city being today very little different from that of another: streets of the South American capitals are only too like the streets of Paris or of Brussels. The general appearance of big hotels, whether situated on the shores of a Swiss lake or in Canada, is almost as unvarying as the savor of the cuisine. It would seem that the acquisition of comfort must be paid for by the sacrifice of that delight of the eye and of the imagination which contact with local customs, art, monuments affords us. Soon the regional characteristics, Spanish, Breton, Japanese, will survive only in books and on the stage. The reign of the Derby hat has begun.

2. Human Conditions

Architecture has been called the most impersonal of arts, involving as it does the collaboration of a number of individuals. This coöperation, to be harmonious, necessarily puts some restraint on the personal freedom of the artist.

If the painter can shut himself up in his studio, receiving neither visitors nor offerings of good advice, can bend himself to his work careless whether or not he pleases the public, can know as little as he pleases of the life and events of his time, the architect is forced to confer with his client in fixing the program of a building, inform himself of the latest improvements in the type of edifice required, then must collaborate with decorators, sculptors, metal-workers, and finally, when he has prepared his plans, must see them take material form through the instrumentality of contractors, masons, carpenters, electricians, etc. Not his the privilege of posing as the reformer of the manners and taste of his time, for if the futurist painter runs only the risk of adding one more canvas to

the multitude of canvases that "don't sell," the architect cannot afford to erect unusable buildings.

In the task of harmonizing the diverse tendencies of so many men, in trying to give form to the vague aspirations toward greater beauty which are present to him each time he approaches a new composition, the architect has an immense field in which to express his own personality. This is very easily shown in comparing two buildings of equal importance, of the same program, erected by different architects.

What has the profession of the architect come to be in the nineteenth century? One may say that the amateur architect of the Renaissance, the workman-architect of the Middle Ages have disappeared and given place to the "professional man." The complexity of the modern edifice has rendered specialization and a long study preparatory to attacking the least problem, absolutely necessary.

Nor has specialization stopped with this. It has further divided the old domain of architecture between the architect and the engineer. Where formerly one directing mind, at once artist and scientific constructor, sufficed (the famous architect of the seventeenth century would build indifferently a Versailles or one of those splendid bridges we still admire), the nineteenth century has differentiated the two functions. The architect is still the director of building properly so called, but the purely utilitarian construction, such work as is commonly believed to require no artistic treatment, is entrusted to an engineer. The long education in art indispensable to the profession of architect, and the technical training which in the end permits every daring in the use of steel, were evidently too much of a handful to be driven in pair. There is then a separation between these two branches of the building profession, which often collaborate, but often, too, ignore each other. When there is this divorce between the two — it is the work that suffers. Modern cities have been too often disfigured by constructions, commercially speaking reasonable no doubt, but only that.

Nor even yet has specialization completed its work; after the structural engineer, it has seen the rise of the mechanical engineer, the electrical engineer, the lighting engineer. Meanwhile, the architect, thanks to his more liberal education, which delivers him from the dangers of over-specialization and subjects him to an artistic culture, remains the only one capable of giving to an edifice what the engineer can never quite give it — Beauty! For over and above utility, we have a craving for the beautiful. "Man does not live by bread alone."

The education of the architect of the nineteenth century is accomplished in one of two ways: either by an apprenticeship in the office of an architect (after the custom of preceding centuries) or else in the schools created from time to time in the various countries. These schools, going back to the eighteenth century in France, began to be established in the United States toward the middle of the nineteenth century, and still later in England, Italy and Germany.

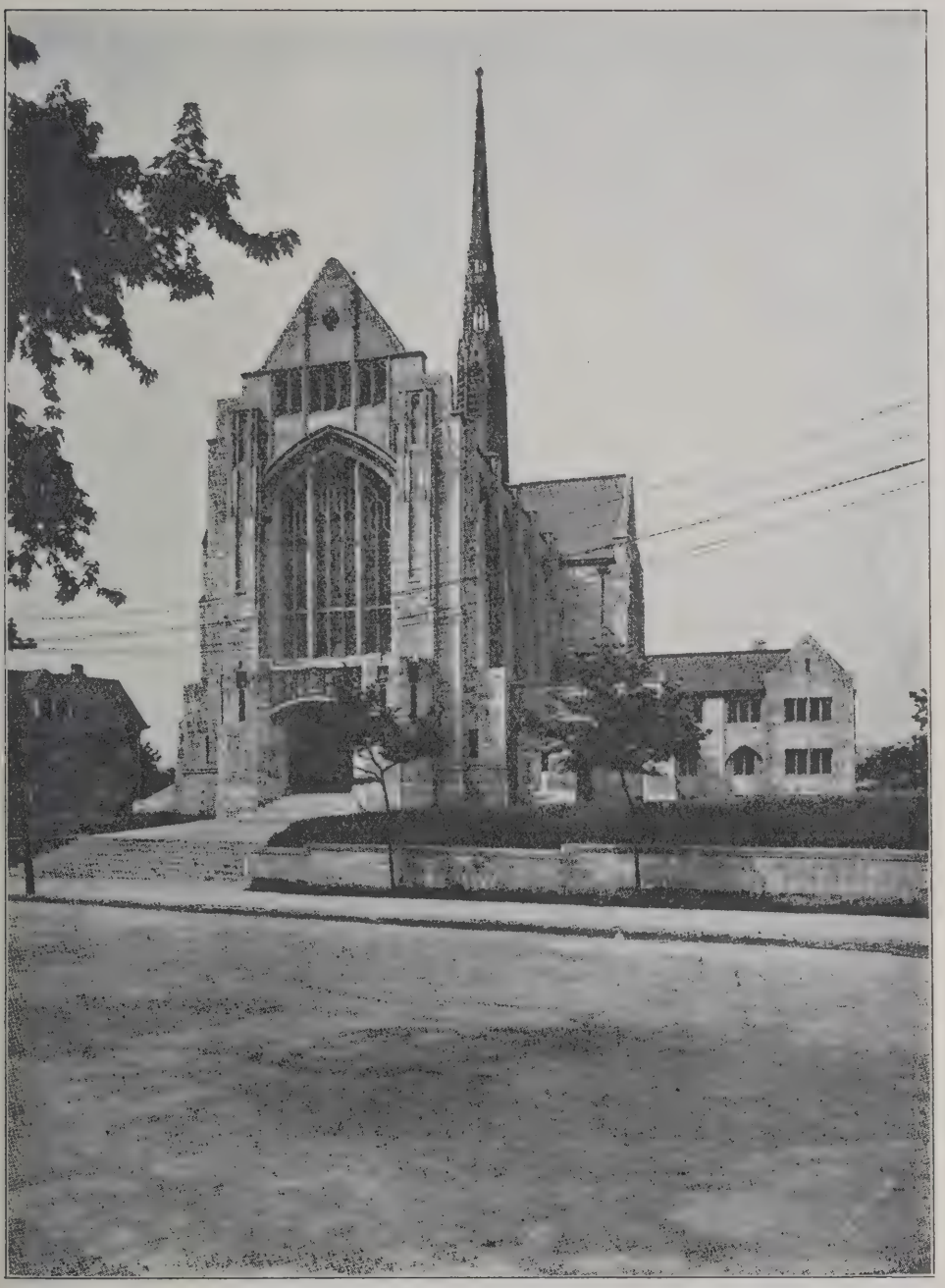
As we saw in the section dealing with the artistic tendencies of the time, the architects of the nineteenth century have followed many leads. In studying their work we shall have occasion to point out how they have interpreted these tendencies in art.

The artistic collaborators of the architect, as we have already said, lost much of their expertness in the nineteenth century. Decorative sculpture, for instance, which touches architecture so closely, fell from the rank of an art to the level of a trade. Modern sculpture considers that it is demeaning itself in applying itself to ornamentation. It considers only statuary worthy of it and has become almost incapable of composing an emplacement. There are still skilful modelers, quite a number of them, but few real artists, and above all few that are original. Exception must be made of the modern German decorative sculpture of the last twenty years, which is such an important feature of the architecture of which we shall speak later.

The experiments of the "Gothic Revival," of the "Art Nouveau," contributed to the awakening of certain crafts from the torpor into which they had declined, notably decorative painting, stained-glass work, ceramics, ironwork. This is perhaps the most positive benefit that architecture has received from these essays.

As to the building trades properly so called, if they have suffered somewhat from the industrialism that tends to make of a man an unimportant cog in a complicated machine, depriving him of that complete mastery of his trade which was possible in small workshops and impossible in large ones, nevertheless, there is still a sufficient number of very good workmen competent for any task. In these later years, much anxiety has been felt, and with good reason, because of the paucity of apprentices, which threatens to make the source of skilful workmen run dry.

The architect is at the same time the artist who composes a work, and the administrator charged with the interests of his client. He will receive from his client the instructions necessary to the accomplishment of his mission, who will be the principal in determining program and financing. Moreover, the client will impose his own habits of living, if it be question of a domicile; his own conception of business affairs, if it be question of a commercial enterprise; and often enough and in any program, his personal taste. These things have always been so. But what has changed is the personality of the client. We have already called attention to this new client of the nineteenth century — the People. To this we must add that the financier, the captain of industry, the merchant, replace "the great" of other days. It may readily be imagined that the mentality and consequently the demands, of these latter day clients are different from those of their predecessors in that rôle. The nineteenth century witnesses, for example, the development of a whole series of constructions for the purposes of investment or speculation, whose *secondary* object is housing (apartment houses, hotels)



FIRST BAPTIST CHURCH, PITTSBURGH

PLATE 72

THE WOOLWORTH BUILDING, NEW YORK

PLATE 73

or business accommodation (office buildings). These are the fruit of those social conditions that are necessarily reflected in the appearance and arrangement of buildings. What has brought the office building into being is not so much an attempt to arrive at a plan better suited to its purposes, nor, as someone has said, the development of the elevator industry; but solely and simply the enhanced value of land in the much sought after vicinity of a business center, and, consequently, the necessity of making the building erected on a given plot of ground bring an interest that justifies the investment. Thus manners and customs are among the conditions that make for change. We see, for example, in the nineteenth century a developing individualism express itself as a demand for greater mutual independence within the domicile, whose plan is otherwise little changed. Hence the importance of corridors, a novelty of modern architecture, which insure the autonomy of each personal domain. For the same reason, the tendency in hospitals is to reduce the number of beds in the same ward. We are far enough from the hospitals of the olden times in which two and sometimes four patients were packed in a single bed, in a room crammed with as many beds as it would hold. We readily recognize the democratic ideas of our time finding expression in the luxury of buildings destined for public use, and above all in the number of these buildings. Only the Roman Empire has set us an example on a comparable scale.

It would be easy to find other instances of this influence of dominant ideas. We content ourselves in this essay with suggesting the directions analytical study should take.

3. Technical Conditions

Under this title we would consider briefly the changes brought about in the nineteenth century in building materials and the technique of building, not from the point of view of the builder, but rather from the spectator seeking to trace the reaction to these changes in the appearance of the building.

Today, the number of materials at the disposal of the architect is much less restricted than ever before, thanks in the first place to the improvement in transportation which distributes with greater equality the resources of our Globe. Also, we have added to our wealth of materials some of the first importance: iron, cement, glass. Of course, iron and glass have been in use since very early times, but it is the nineteenth century which, in industrializing their production, has given them the place they now occupy.

Glass, obtainable at small cost and in large panes has made possible the multiplication of windows and the vast expanse of the shop front, the construction of factories and workrooms in which the elimination of walls allows the light to penetrate to every corner.

The rôle of iron and steel is still more important. One may say it has removed problems on the solution of which generations of architects have spent their lives. To roof a nave the length of a cathedral or of a Roman bath is mere child's play for us. We know how to bridge enormous spans, to support the most crushing weights, and above all to solve by relatively simple combinations problems formerly insoluble, like that of the cantilever construction. The problem of the dome, too, finds in the Halle au Blé, at Paris (1809), a solution by the use of metal trusses that has since served for all the state capitol domes.

Or is it a question of increasing the height of building? This country has developed the possibilities of steel framework until it can meet any demand that is made upon it. This steel construction, by the way, started controversies which still reverberate. Since the middle of the nineteenth century it has been asked how so radical a revolution in the processes of construction had failed to bring with it a revolution in the forms of composition and of decoration. We shall have to return to this matter in our study of architectural setting; but suffice it for the moment to recall that after numerous and interesting experiments in the way of emphasizing, either on

the exterior or in the interior of the building, the character of its metal framework and thus taking advantage of the framework in the general effect, the present tendency seems to be, on the contrary, to encase it in masonry. If logic finds itself dissatisfied with a method that hides the most important element in the structure, practical considerations insist that the metal must be protected both against the corrosive action of the atmosphere and the danger of fire. That this will remain the last word on the subject is little likely, and we shall probably witness new experiments in the treatment of metal construction.

Cement, also, in the form of concrete (differing little from the masonry of small stone, improperly called concrete, of the Romans), or combined with metal in reinforced concrete, marks an important advance in the history of technical processes. From the first experiments, about 1860, to the intensive development of our day, progress has been rapid, and as the difficulty that we mentioned as affecting steel — its unavailability for use on exteriors — does not exist for cement, the development of forms characteristic of the material has been more noticeable. There are some warehouses that are really remarkable works from every point of view, even from that which considers their external appearance.

Other materials, less literally novel, have nevertheless found so extended a use that they leave their mark on our architecture. Such are the various porcelain products, used in sanitary arrangements, terra cotta as a material for façades, etc.

The *use* of materials has undergone little change. If we except the technique of steel construction and of reinforced concrete, we still build pretty much as did the Egyptians and Romans. This, be it remarked, is the way with all industries truly primordial, they undergo little transformation with time. But we may notice more expeditious methods, thanks to machinery, for the handling of material and for the cutting and dressing of stone.

If we have preserved all the elements of ancient architecture, we apply them more frequently at the suggestion of taste, and less under the compulsion of necessity. They have passed into the repertory of decorative forms, a transformation that is found to have taken place at every stage of the history of architecture and is vainly made a matter of reproach to our epoch alone.

Other technical innovations have come to be added to our baggage. We have already noted in passing the progress in methods of heating; but that is a purely material benefit that does not at all affect, or rather it affects unfavorably, the architectural aspect of buildings. Lighting has indeed a more pronounced effect on architecture. Natural lighting, which it is desired to make as ample as possible, has pierced our walls with many more holes than our fathers felt any need for. All modern edifices have somewhat the appearance of cages and have lost the calm and solidity of the older monuments. At night, the appearance of the streets, has been still more markedly changed. The beginning of the nineteenth century had welcomed gas as a thing of wonder: it seems to us sadly out of date since electricity has furnished us with a thousand devices for illumination. Here, then, technical progress coincides with an esthetic development.

Roofs, from the end of the eighteenth century on, show a tendency to flatten themselves out. Usually, the taste for the antique models is invoked to account for and to condemn this practice. The explanation seems hardly adequate when one considers the wide application of this new method of roof construction. It has become practically universal in the United States for all forms of building. It seems more plausible to explain it in terms of the difficulty of covering our compact plans with the old peaked roof. The desire not to waste a square inch of ground, together with the complexity of modern plans, renders the flat roof almost inevitable and has therewith strikingly modified the sky-line.

The development of the elevator has kept pace with that of

the commercial building. Its use has diminished the importance of the staircase.

Finally, there remains to be mentioned the influence that a more general appreciation of hygiene has within the last sixty years exercised on interior arrangements. The more liberal distribution of water and improvements in plumbing have put comfortable bathrooms within the reach of the most modest dwellings.

VI. THE PROGRAMS OF MODERN ARCHITECTURE

We have so far reviewed first the general ideas that guided the architecture of the nineteenth century, the traditions that it received from prior periods and which formed the foundation on which its new construction rose; then the surrounding conditions that influenced this construction whether they were imposed by nature, or derived from races or individuals, or resulted from contemporary advances in science and technical art.

We shall now trace the results of these various causes, and first of all, we shall consider the varieties of program with which our architecture is confronted.

The program of a building is the sum total of services that are expected from this building, not only in meeting practical demands, but also in satisfying those of taste. For it is by no means sufficient for an architecture to furnish places adapted to their uses (a narrow point of view too often taken by the engineer), but to do this in such wise that these places shall by their appearance produce in the spectator a certain state of mind. A church, for example, can from a strictly practical point of view, be conceived as any sort of a large room moderately well lighted. But it is evident that the program of a church cannot stop here. This room must awaken in one who visits it certain religious ideas which may vary with the denomination whose tabernacle it is, but which are

in any case as important as is the assurance of protection from the elements, though this may be said to be the primary object of the building. A factory floor, well lighted and heated, might, if equipped with the necessary furnishings, take the place of a library. But should we be satisfied with this arrangement? Do we not require of this type of edifice both outside and in, certain moral, or more exactly, esthetic impressions; a meditative and studious atmosphere, a decorative setting worthy of the masterpieces of literature that it houses? A ball-room is just as truly a big room as is either of the preceding examples, but who does not see that here too it would not suffice to provide four walls, a floor and a ceiling, that the aspect of the room must harmonize with the mood of those who use it, must be in gala dress as they are, must suggest gayety, music and movement?

The program then involves not only a list of the accommodations required; but the sentiment with which their architecture must be studied, the *character* of this architecture.

We have already seen that the modern program, corresponding to an advanced civilization, is necessarily more complex than the ancient. These programs can be classed under two headings: those of our own time (or such at least as are so profoundly modified by the time that they may be said to belong to it), and those that represent the normal evolution of old types of edifice under the influence of various conditions.

Among the first we should put: the railroad terminus, the bank, commercial and industrial buildings, hotels, schools, buildings for representative and administrative bodies, museums, laboratories, auditoriums.

In the second group we should include: dwellings, municipal buildings, hospitals, theatres, churches, courts, prisons, bridges, and memorial monuments.

The limits of this chapter prevent us from going at length into the study of these different types, and besides, we shall later on have them exemplified in the architecture of different countries. But at least we may note that the number

of new programs is considerable and their mere enumeration suffices to show what little foundation there is for strictures upon the barrenness of modern architecture.

These programs have found their solution (solutions are never final), thanks to successive approximations, or to the genius of some architect who has fallen at once upon the plan best adapted to the program (as did, for example, Labrouste, in designing the Ste. Geneviève Library at Paris).

Then, too, programs will follow in their evolution the development of the institution they are designed to house. Thus there is a gradual growth whose stages represent solutions, good perhaps for the moment at which they see the light of day, but quickly left behind as superannuated. One might liken them to garments perfectly fitting the child for whom they are made, but becoming ridiculous and hampering as the child grows. Take, for example, the railroad terminus. The number of trains arriving and leaving in the first half of the nineteenth century was so inconsiderable that they were sufficiently accommodated with one track for incoming and another for outbound trains, with some few switches and turntables. These conditions determined the plans of the first great terminal stations: two groups of constructions, the one arranged for arriving trains, the other for departures, placed parallel to the tracks to the right and the left of a great glazed shed covering the tracks. When the traffic became heavier, trains required numerous tracks for their accommodation, access to which could only be provided at the end. The result is that the station accommodations have had to be placed at the head of the tracks, not at their sides. (Pennsylvania and Grand Central stations, New York, Union station, Washington.) But in the first of these examples another factor enters which modified the plan: the introduction of electric power which permits arrangements quite different from the old-time shed required for the coal-burning locomotive. If then terminal stations like the old Gare de Lyon, at Paris, were good solutions about 1860, they became thoroughly out of date forty

years later. Some critics of architecture, entering a building of the kind just cited, will be able to see only the decorative detail, and will condemn or approve the use of classic columns, or even the choice of the form of capital given to these columns. This is to reduce architecture to a choice of decoration all on the surface and of little enough importance since it depends only on that ever-changing thing — taste. It is an application to buildings that are the most complete expression of our civilization of the standards of judgment of a young lady choosing her automobile for the tint of its paint and the luxury of its upholstery. Now the automobile has other qualities. There is a general form more or less modernized which renders more or less happily the essentials of the machine giving the impression of speed and strength. There is also a more or less complete provision for the comfort of the occupants. There is finally the efficiency of the motor which will or will not give the service expected of it.

To judge such works as the Pennsylvania Railroad or the Grand Central stations in the terms of mouldings, without seeing or feeling all the grandeur, all the poetry of these great modern conceptions, is a form of intellectual myopia for which this volume would seek a remedy, if that is not too presumptuous an ambition.

If we turn to the consideration of buildings of the second group, we may there follow the transformation of old programs through the years of the nineteenth century.

Take by way of example the theatre. The first covered rooms in which plays were acted date from the Middle Ages and are simply a utilization of rooms already existing and built for other purposes. As late as 1669, to establish the opera at Paris a hand-ball court was rented. Loges, or boxes, were constructed, sign of an aristocratic society in which the privileged insisted on sharp separation from the crowd. The problem of affording ease of entrance and exit to large numbers was naturally not attacked, and the writings of the period complain of the crowding. Until the end of the eighteenth cen-

THE DETROIT NEWS, PAPER WAREHOUSE

PLATE 74

A COUNTRY HOUSE AT BRYN MAWR, PENNSYLVANIA

PLATE 75

tury the audience of the parterre is compelled to stand. But little by little ameliorations are introduced which with Louis, architect of the Old Comédie Française and of the theatre of Bordeaux, reach a form that is still the type of European theatre planning. These theatres consist in a foyer and stairways giving access to the various seats, and a circular room surrounded by three or four galleries (Scala, at Milan; the Opera, Petrograd) and a stage which is very nearly the same as ours. The room lends itself to an architectural treatment that has yielded some very happy solutions (Paris Opera, Philadelphia Academy of Music), for it is seen in its ensemble from every seat, thanks to its circular form, and to the shallowness of the galleries. It is a sort of salon in which one sees one's neighbors and is satisfied that one is seen by them. On the other hand, in many theatres a number of the seats have too oblique and partial a view of the stage, the balcony supports interfere with the view, and the upper galleries, placed too high, are difficult of access.

Toward the end of the nineteenth century, the German architects attempted a fan-like arrangement of the room, placing the stage in a corner, thus bringing it into more direct view. More important changes have come from the United States, tending (1) to give to all the seats a better view of the stage, (2) to suppress the loges and reduce the number of balconies, thus minimizing the distinction between the different elements of the audience, (3) to suppress the importance of the foyer, frequently eliminating it altogether.

The theatre is losing its character of a social gathering and becoming an edifice solely designed for seeing, and seeing comfortably, the performance. To this end, thanks to the possibilities of steel construction, a single deep gallery nearly doubles the space of the parterre, and gives to all the seats a direct instead of a side view of the stage. Here is an obvious gain in comfort, but a loss in the attractiveness of the room, almost covered by the balcony. In it the spectators, all facing the same way, can with difficulty see each other. One

notes once more the democratic character of modern architecture and our modern individualism jealous of its personal consideration.

In other programs of this same group we might follow the influence of other dominant ideas of the time: such as improvements in hygiene (*e.g.*, in hospitals). There are, too, slight modifications to be noticed in certain old programs, like that of the church, which nevertheless tend to conserve almost absolutely the solutions of the past. It is in following these programs that one comes to the conviction that what makes for the progress of architecture is less the artistic talent of the architect than his comprehension of the needs and ideals of his time and his facility in expressing them. The effects of "modernism," arriving only at an originality of decoration, seem faded a few years after their appearance, however enthusiastically they may have been received. This has been the fate of certain essays in Chicago, in Paris, and elsewhere, acclaimed not twenty years ago as the dawn of a new era, but whose vogue has proved very short. What survives are the well-thought-out works in which a carefully studied plan gives an original form to the building, and in which the general appearance is a function of the plan, based on traditions, of course, but so modified as completely to satisfy demands different from any our ancestors conceived.

VII. ARCHITECTURAL SETTING

1. The Decorative Forms of the Whole and the Detail

What we have called forms and decoration is an element in any architecture, admittedly an important one, but not in itself sufficient to serve as a basis of judgment, current opinion to the contrary notwithstanding. The critics of art, who are generally little informed on architecture, have done much to spread this opinion. Ruskin, for example, in his "Seven Lamps of Architecture" (Chapter I) writes: "It would be similarly unreasonable to call battlements, or machicolations,

architectural features, so long as they consist only of an advanced gallery supported on projecting masses, with open intervals beneath for offense. But if these projecting masses be covered beneath into rounded courses, which are useless, and if the headings of the intervals be arched and trefoiled, which is useless, *that* is architecture." Ruskin had about as enlightened a view of the veritable basis of this art as that of the contractor for whom the architect is one "who puts a few trimmings on an otherwise perfectly good building." And so, in one of the downtown streets of New York, in the midst of those giant towers which are our office buildings, which express a whole life of furious business activity, the power of money, the state of a society in which a downtown office controls the labors of thousands of workmen in some distant steel plant, the connoisseur of art lifts his nose in the air, catches a glimpse of a cornice three hundred feet above the pavement and remarks: "This building is a copy of a Renaissance type of about 1463. It is *not* original!"

Ah, no! Architecture is more than that — more than a question of detail. Even if the forms were copies, it is none the less true that these forms are not assembled as in the buildings in which they were originally used. A writer of today uses a vocabulary very little different from that of a hundred years ago. Does it follow that the literary work of today closely resembles that of the eighteenth century? Besides, these forms are *not* like those of the past, and architects who think they are copying and are trying to copy are under an illusion. In spite of themselves, their own personality betrays itself in the way those borrowed motives are adjusted to the modern building. Then comes the sculptor who gives another accent to the ornament. So that the final result is something quite different from the source from which it was drawn.

Compare for example the buildings of the period 1830 to 1850 in the United States with their Greek prototypes, or, if you will, the "Romanesque postoffices" of the Richardson

school with the churches of southern France. Will one maintain after this that notwithstanding all the books, photographs, and recollections of travel, it is possible to build archaeology? Of course, we of today think ourselves cleverer than our fathers, and the Neo-Quattrocentists are convinced that they give to their works the aspect and the charm of their favorite models. The experience of the past is there to shatter these illusions. It is quite impossible for the architect of 1922 to produce anything but the architecture of 1922 — but he can make that good or bad architecture.

Modern forms and decoration may be considered in their collective use (their monumental aspect) or as to their detail.

The modern monumental aspect will respond to the influences we have previously studied: (1) great variety, due to an eclectic archaeologizing and to the conflict of schools, (2) lack of simplicity due to the complexity of the modern plan and to the number of stories, (3) apparent lack of "substantiality," due to the use of steel which, being itself hidden, gives to the walls the effect of being too slight for their height, and to interior details (ceiling, arches, balconies) the aspect of floating in the air.

Finally, the elimination of all roof-lines has given a geometric outline to the silhouette and suppressed one of the happiest elements in the architecture of the past.

The larger lines of the composition vary greatly, of course, with the country and the period. In all of them, however, Roman or Greek Classicism imposed their simple masses and a certain severity. This gives place, with the Gothic Revival, of the period 1860 to 1880, to a seeking after the interesting sky-line, after the picturesqueness and, frequently, the overcomplication.

Contemporary architecture aims at a simplification of the massing, either by bracketing together several floors under the straight lines of pilasters or columns, or by having the windows almost without ornamental treatment so that they scarcely break the simplicity of the wall. The lines of the base

and of the cornice alone stand out and ornament is confined to a few points. This does not apply to domestic architecture, in which, on the contrary, the effort after picturesqueness and naïveté of composition remains the dominant motive. Genuine rural architecture is almost everywhere on the way to extinction.

2. Decorative Detail

The principal characteristic of the decorative detail of the nineteenth century is the diversity of the sources on which it draws. Never has any architecture put under contribution so many races and periods. If it were not for the unifying tendency of which we have spoken, which brings it about that an architecture somehow belongs to its time, our streets would be museums of architectural history.

Polychrome effects are little used, or at least they resist so feebly the atmospheric conditions of modern cities that they count for little in the general urban scenery. In the country, however, houses do show a tendency to return to a polychrome treatment based on the use of different materials.

Besides ornament properly so called, we must note the extensive use of certain constructive forms of the past in a purely decorative sense (arches of plaster, false walls of light material, etc.). These devices, blameworthy no doubt from the point of view of "truthfulness," have for their excuse that in all times constructive forms that have been supplanted by others tend to be preserved by architecture in the guise of decorations. We find this certainly in the history of all preceding ages. The eye having become accustomed to certain forms, seems not to feel at home if it does not find them, though only by way of imitation.

Many interesting experiments in the decorative use of new materials have been made in the nineteenth century. An extension of the decorative use of iron is exemplified in the National Library, Paris (1860), in the Paris Exposition of 1889, in the commercial buildings (department stores, etc.)

of Germany, and happy results have been attained in some recent constructions. In the United States we may note experiments in decoration making use of clay ornaments inlaid in cement, as in the hotels of Atlantic City, in interiors, pavements, etc. The revival of the arts-crafts which has taken place within the last years in England, Belgium, France and the United States has restored to favor certain forgotten materials and technical treatments.

VIII. LOCAL SCHOOLS

1. United States

In the preceding chapter we saw the American school, though still very much under the influence of contemporary English art, arrive nevertheless at a personal note, thanks principally to its success in rendering in wood the classic decorative system. The country was still too poor, too absorbed in its material development to be able to interest itself on a large scale in important enterprises of art. We must wait another half century for the fine arts to have become a career capable of attracting youth, and for architecture to have passed out of the hands of inexpert builders into those of professionally trained architects. And these latter will generally have had to seek abroad an organized instruction in full swing. In their turn they will have taken the leading part in the establishing of and the rapid perfecting of schools of architecture.

Still this period of gestation is not entirely unproductive, though the quality of its production continues to deteriorate from the beginning of the century to about 1875. We may cite the New York City Hall by McComb and Mangin (1803 to 1818), in which Louis XVI influences are very obvious; the primitive part of the capitol at Washington, by Thornton, Hallet and B. H. Latrobe (1793 to 1830) to which (toward 1860) were added the wings and the present dome. At Washington, too, we find the White House (1792), the Treas-

ury Building, while at Philadelphia we have Girard College and Franklin Institute, at Boston the Custom House and the State House, at Charlottesville the University of Virginia, by Thomas Jefferson (1817).

We mentioned English influences as predominant. This is by no means the only source of early American architecture. French influences may be traced along the area of French colonies from Canada to the end of the Mississippi Valley, for instance in the Jackson Public Square at New Orleans. Spanish influences are clearly apparent in the old Spanish colonies, the Mission style of California, Florida, and the Southwest.

All these monuments bear traces first of the Classic revival, then of Greek revival in favor at the time. When the Classic revival of the eighteenth century finally died, toward 1850, one may judge by the mediocrity of the construction that replaces it how beneficent, in spite of its faults, had been this tradition. All sense of proportion and of what the eighteenth century had called the "nobility" of forms has disappeared along with it. It is the age of "Federal Buildings," with their many tiers of columns, their roofs without grace of line, their cast-iron ornaments. One may recall the State and the Army Buildings at Washington, or the City Hall at Philadelphia. In domestic architecture, it is the age of the "brown stone front," and of the essays in rationalism of Furness and Evans, in which a "new art" tries to make an accentuated construction the principal decorative element.

Meanwhile, travel had opened the eyes of the young American architect to the artistic patrimony from which the ocean separated him. The influence of H. H. Richardson (1826 to 1886) and of R. M. Hunt (1827 to 1895) is typical of this awakening. Both studied at Paris; but whereas Richardson, in a too short career, strove to erect Romanesque forms on modern plans (Trinity Church, Boston), Hunt continues the classic tradition of the France of his day (central part of the Metropolitan Museum, New York). Richardson has left

a host of imitators from one end of the country to the other, but this return to the art of the twelfth century seems to have been only a fashion of architectural vesture, and fashions are of brief duration. The architects who studied at Paris brought back a science of composition of which the improvement in planning large buildings is the most important fruit.

In 1893, the World's Columbian Exposition took place in Chicago. Its planning and monumental character, based decidedly on Neo-Classic lines, mark a turning-point in the evoultion of architectural taste in the United States. It has set, up to our day, the standard of public buildings, at least in their exterior design. The board of architects, of which D. H. Burnham was the chairman, gave to the large crowds that attended the Fair an object lesson in the value of an orderly arrangement of buildings, which has borne fruit.

It is in the last thirty years that American architecture has won a place for itself in the very first rank. In possession now of a science of composition acquired from the French school, of a taste formed by the study of beautiful Greek and Italian models, of an eclecticism that lets it draw intelligently on all the treasury of the past, it is capable of attacking any program of modern architecture. Its production is so rich that a list of names and works which would do it justice would have to be a very long one indeed. We shall have to pass over in silence much that is worthy of mention; but any illustration must include:

ADMINISTRATIVE BUILDINGS

State Capitols, which as early as 1845 (Tennessee, by William Strickland) had offered interesting studies, become in our time sumptuous edifices, classic in plan and decorative setting. Among the most notable we may cite Rhode Island (McKim, Mead and White), Minnesota (Cass Gilbert) and Missouri (Tracy and Swartwout).

City Halls. Along with the type which seeks after the dec-

orative and the sumptuous (City Hall of San Francisco, Bakewell and Brown) is to be found another in which the necessity of housing the vastly complex machinery of a large city government gives us an effect more closely approaching the office building (New York City Municipal Building, McKim, Mead and White; Oakland City Hall, Palmer and Hornbostel).

BUILDINGS OF PUBLIC UTILITY

Railroad Terminals. We have already cited the two great terminals at New York (Pennsylvania, McKim, Mead and White; Grand Central, Warren and Wetmore, and Reed and Stem). They are works of the very first order, of different inspiration as to decorative setting, but both of them beautiful solutions of a most difficult program. It is impossible for one whose eyes are not blinded by the *parti pris* to pass through their suites of vast rooms without experiencing that sense of grandeur we admire in the works of the past.

Libraries. The library has furnished the most varied solutions. There are to begin with such great institutions as the Library of Congress (by Smithmeyer and Pelz and Edward Pearce Casey), the New York Public (Carrère and Hastings), the Boston Public (McKim, Mead and White), the Detroit Public (Cass Gilbert); finally a host of the Carnegie libraries, which, though small works, are not to be judged works of small art.

Institutions of Instruction. The beginning of the century assumed that buildings suitable for the dwellings of men were equally available for the housing of institutions of learning and their students (University of Virginia). In our days under the influence of Cope and Stewardson (University of Pennsylvania, George Washington University), of Cram, Goodhue and Ferguson (Princeton, West Point), Day and Klauder (Princeton, Wellesley) a noticeable return to the Gothic, or at least to the centuries between the fourteenth and the eighteenth, inspired collegiate architecture. It would

be puerile to dismiss works of the value of those we have cited with a word of condemnation for their too literal application of forms remote from our time. Moreover, the fact that they find favor in the eyes of a social class that prides itself on its culture — young men who find a seduction in this Romanticism — would suggest that we seek an explanation for a certain contradiction in American architecture. On the one hand this architecture attacks with every daring the new problems set by the public and business life of its time; on the other, its private, its religious, its studious life willingly take refuge in the past.

"America" (writes Santayana[1]) "is not simply a young country with an old mentality: it is a country with two mentalities, one a survival of the beliefs and standards of the fathers, the other an expression of the instincts, practices and discoveries of the younger generations. In all the higher things of the mind — in religion, literature, in the moral emotions — it is the hereditary spirit that still prevails, so much so that Mr. Bernard Shaw finds that America is a hundred years behind the times. The truth is that one-half of the American mind, that not occupied intensely in practical affairs, has remained, I will not say high-and-dry, but slightly becalmed; it has floated gently in the back waters, while, alongside, in invention and industry and social organization, the other half of the mind was leaping down a sort of Niagara Rapids. This diversion may be found symbolized in American architecture; a neat reproduction of the Colonial mansion — with some modern comforts introduced surreptitiously — stands beside the skyscraper. The American will inhabits the skyscraper; the American intellect inherits the Colonial mansion. The one is the sphere of the American man; the other, at least predominantly, of the American woman. The one is all aggressive enterprise; the other all genteel tradition."

There are, however, exceptions to every rule, and the pre-

[1] Quoted by Francis Hackett, *Horizons*, p. 47.

vailing Romanticism of collegiate architecture is broken by such instances as the Massachusetts Institute of Technology (W. W. Bosworth), the University of California (John Galen Howard) and Columbia University (McKim, Mead and White).

School Buildings. Less hampered by memories of Oxford and Cambridge, less dominated by the need of finding a "distinguished ancestry" for their offspring, the school builders have ventured to be modern. Certain school buildings of New York (C. B. J. Snyder), of St. Louis (William B. Ittner), of Boston (E. M. Wheelright), of Chicago (Dwight H. Perkins) are very happy examples of a modern program frankly met.

Churches. The best churches built in our day, and some are excellent, are, however, of a type avowedly archaeological: it suffices to cite the works of Messrs. Goodhue, or Cram and Ferguson. As for the churches of denominations that depart further from the older traditions (Baptist, Christian Scientist, etc.), it may be said that in spite of interesting essays they have not yet found their form of expression. These modern essays approach more or less closely to the auditorium type.

Theatres. We have already mentioned the progress made by the theatre in this country, a progress in which Messrs. Herts and Tallant, Ingalls and Hoffman, C. H. Blackall in Boston, Thomas W. Lamb in New York, were the pioneers.

Commemorative Monuments tend to a greater purity of form and simplicity of composition. The entire work of Henry Bacon (particularly the Lincoln Memorial, Washington) reveals this tendency.

In *Commercial and Industrial Architecture* American art has given itself free rein. It would be impossible to cite the numerous office buildings worthy of study; but every one knows the Singer Building (Ernest Flagg), the Woolworth Building (Cass Gilbert), the New York City Municipal Building (McKim, Mead and White), the Bush Terminal (Helmle and Corbett), the Cunard Building (Benjamin W.

Morris), and the numerous office buildings from the Atlantic to the Pacific due to D. H. Burnham or to Burnham and Root. These last architects opened the way along which so many have followed in designing the first complete type of modern fireproof office building. The first steel skeleton building, the Tacoma office building in Chicago, had been planned by Holabird and Roche. In the middle west, also, Louis H. Sullivan contributed valuable solutions of the problem of finding the adequate exterior treatment of high buildings. To D. H. Burnham and Company we owe this American solution of the department store, the Wanamaker Store in Philadelphia. The same program has found other remarkable applications, as in the Altman Store, New York City (Trowbridge and Livingston), the Gorham Building (McKim, Mead and White), the Lord and Taylor Store (Starrett and Van Vleck), etc.

Chicago offers good solutions of the *Warehouse* program (George C. Nimmons and Company and Price and McLanahan). Certain industrial edifices are of the very first order: automobile sales buildings in Detroit and the Detroit News Building (Albert Kahn), the U. S. Army Supply Base in Brooklyn (Cass Gilbert).

Hotels are subjected to one condition in common with office buildings, that of yielding the maximum return on the investment in land. Among the best and most modern solutions must be mentioned the series of hotels constructed by Warren and Wetmore, those of George B. Post and Sons, of Holabird and Roche, etc.

Banks have been made the subject of compositions of great value even if considered from a purely esthetic point of view: notably those of York and Sawyer, Tracy and Swartwout, McKim, Mead and White.

There remains *Domestic Architecture* — but here the works and the names are so numerous that it would be sheer temerity to make any selection. American domestic architecture is without equal in the art of our time. We must confine

THE NEW LOUVRE, NORTH WING

PLATE 76

THE GRAND PALACE, EXHIBITION HALL, CHAMPS ELYSÉES

ourselves to a few names: Carrère and Hastings, Wilson Eyre, John Russell Pope, Delano and Aldrich, Howard Shaw, Mellor, Meigs and Howe, Charles A. Platt, Cross and Cross, Walker and Gillette, Grosvenor Atterbury, the local schools of Southern California, Philadelphia, Chicago, New York, etc.

With domestic architecture we may associate the *Club*, of which very fine examples are to be found in New York, Chicago, Pittsburgh, Detroit, etc.

Finally, the collaboration of architect and engineer has given some very fine results in *Bridge Construction* (Manhattan, Carrère and Hastings; Hell's-Gate, Henry Hornbostel).

2. France

As we have said, the Classic Revival in France, beginning about 1775, and developing alongside of the art called Louis XVI, has for its motive an absolute return to Classic antiquity. It sets before it an ideal of austerity, strength, grandeur, tempered neither by national tradition nor the necessities of the plan. It is pure ideology applied to architecture. But the Revolution that followed left to the architect little opportunity to give material form to his ideas: it is principally from engravings, from the competitions of the school (Grand Prix 1780 to 1810) that we are made aware of these tendencies. Yet these ideas did leave their impression on architecture: the Madeleine, the Bourse, the Panthéon, l'Arc de Triomphe (Chalgrin, 1806).

The official architects of the Empire, Percier (1764 to 1838) and Fontaine (1762 to 1853) (represented in the Louvre and the Arc du Carrousel) were also the designers of interiors and of furniture that enjoyed worldwide influence.

This Classic ideal has never lost its hold, but soon ridding itself of pure archaeology returned to those logical traditions that are at the bottom of the French temperament. The result was such, that H. H. Statham could say: "As regards secular buildings, the Paris of the middle portion of the nine-

teenth century can show some of the most unquestionable successes of the (modern) period."

In spite of the Gothic Revival, which created more controversies than works, the years of the nineteenth century are rich in works of the first importance. Duc constructed the modern portions of Palais de Justice, Labrouste, toward 1850, created the Bibliothèque Ste. Geneviève, a work displaying a most remarkable cohesion of exterior, interior and construction. It is also in this edifice and in the Salle de Lecture of the Bibliothèque Nationale (1859) that we see the happiest attempts prior to those of our own day at the use of steel, both as an element of construction and of decoration. Hithorff in the church of St. Vincent de Paule and in the Gare du Nord (still in use), Duban in the École des Beaux Arts, Baltard in the church of St. Augustin, all attempt the use of the new materials of construction in suitable forms.

The new buildings of the Louvre, 1852 to 1865 (of Visconti and Lefuel), the Opéra (of Charles Garnier, built 1860 to 1872), if they are of a less pure taste than that of the best French tradition, show nevertheless an admirable command of composition, of planning, and of large decorative effect.

In the period after 1870, we may note the reconstruction of the Château de Chantilly by Daumet; the manner in which metal is used in the Exposition of 1889 Machinery Building (Dutert), Dôme Central (Formige), and finally, toward 1900, the Grand Palais des Beaux Arts (Deglane, Thomas and Louvet) and the Petit Palais (Girault), the lycées (preparatory schools) (Vaudremer).

Religious architecture, beyond some mediocre adaptations of the Gothic, counts but few names and few works: Vaudremer (St. Pierre-de-Montrouge, Notre Dame d'Auteuil); Abadie (Sacré Coeur de Montmartre); Bossan (l'église de Fourvières, Lyon) and Esperandieu (Cathedral of Marseilles). These are the principal examples.

Among works of importance must also be mentioned the

Medical School, the Musée Galliera (Ginaint), the new Sorbonne (Nénot), the new Paris Hotel de Ville (Ballu and Deperthes), the Gare d'Orléans (Laloux) and the works of Gaspard André at Lyon.

Contemporary production in cities already replete with public edifices, is necessarily more restricted than in the United States. Frequently old buildings are put to modern uses (Museum of the Louvre, of Lyon, of Toulouse, etc.), or converted into ministries and official residences. It is the price countries like France, Italy, Spain have to pay for the ancient treasure they wish to preserve. Here, art, having become sophisticated, has lost something of the simplicity of the great works. It is hard to say whether certain tendencies toward reaction, such as the new Theatre des Champs Élysees (Perret Frères) will prove really fertile. Some, like the Art Nouveau of 1890 to 1910, had a short career.

3. England

The unity of modern architecture is made apparent by a review of its examples in different countries. Everywhere the same causes and the same effects are revealed in the art of the period. What resulted in France from the supplanting of Louis XV and Louis XVI art by the Classic Revival is reproduced in England. "The inheritors of the traditions of Jones and Wren died out, and were succeeded by scholars and archaeologists.

"In the first half of the century they were contriving the best churches, houses, railway stations compatible with obedience to Doric or Ionic rules; in the second half, their incubus was the precedent set by the cathedral builders of the thirteenth, fourteenth and fifteenth centuries, modified and complicated by examples taken from various architectural centers on the continent of Europe!"[1]

The Classic Revival has left us the Bank of England

[1] Sir Walter Armstrong, *Art in Great Britain and Ireland.*

(Soane), the British Museum (Smirke), public buildings in Edinburgh (Candon), St. George's Hall, Liverpool (Elmes). Sir Charles Barry, besides the Houses of Parliament, left various works inspired by the Italian Renaissance.

The Gothic Revival struck deeper root in England than in France. The names of Sir Gilbert Scott, G. E. Street, J. L. Pearson, Alfred Waterhouse, are associated with numerous edifices scattered through the years from 1840 to our own day. There is little to be said of these works: superficial studies, they are already out of date.

Contemporary art is more interesting. Richard Norman Shaw seems to have knotted the ends of the thread of tradition broken by the "revivals." In his London works (Gayety Theatre, Piccadilly Hotel) and still more in his numerous country houses, his originality makes itself felt and inspires a whole group of architects. Belcher, Marshall MacKenzie, Wilson, Reginald Blomfield, Sir Aston Webb, G. F. Bodley, M. H. Baillie Scott, E. I. Lutyens, in an architecture inspired by the Renaissance but of an unmistakably national flavor and very modern, have changed the aspect of London streets, created types of country house of a cultivated elegance that yet preserves the picturesque and random charm which has always belonged to the English School.

4. Germany and Austria-Hungary

In Germany and Austria, as might have been expected, the Classic Revival was none of those free interpretations of classic motives in which the personality of the author transpires through borrowed trappings. Nowhere else has architecture been so servile a copying of documents. The Royal Theatre of Berlin, the Nicolai Kirche at Potsdam (Schinkel), the Propylea at Munich and Rumes Halle (von Klenze) have all the rigor of that Neo-Greek of 1830 to 1840 which sets out to employ the forms of Greek architecture and proceeds to employ them with a vengeance.

LITTLE THAKEHAM, SUSSEX, ENGLAND

PLATE 78

1

2

1. A PUBLIC BATH, BERLIN
2. A FIRE ENGINE HOUSE, BERLIN

A little later, Gottfried Semper brought the study of the Italian Renaissance to lend something of flexibility to the stiff lines then in favor. His museum at Vienna, his theatre at Dresden, are interesting solutions of a new program by modern formulas. With this influence may be associated the Lessing Theatre, Berlin (by Hude and Hennicke).

Traces of the Gothic Revival are also to be found, for example, in the Parliament Buildings of Buda-Pest (Steindl).

But it is only after 1870 that German architecture takes a fresh start. The Neo-Classicism of Paul Wallot (Parliament Buildings, Berlin) begins to show, along with much that is heavy, an interesting orginality of study. There is created a very modern school which, without repudiating anything of the past, succeeds in giving to all its works a distinct national character and moreover in finding new solutions for new problems. The exterior forms, the lines of the roof, often remain heavy; but a very intelligent study of the interior gives perhaps the newest note in decorative setting, and remains free from the exaggeration of those Art-Nouveau effects that have made themselves prominent in more recent works.

Architects like Ludwig Hoffmann, Messel, Otto Rieth, Bruno Paul, produced works of great value in every program: railroad stations, commercial buildings, schools, museums, theatres, that are more than a promise of a rejuvenated art.

5. Other Countries

In Sweden, we find also interesting tendencies toward new expressions in the works of men like: Östberg, Grut, Westman.

In Belgium, in Holland, in Switzerland, numerous are the works that merit citation. Italy and Spain are less well off in the modern period. But we must bring our enumeration to an end. It will, we hope, serve to show the general course of modern architecture. The years to come will show other programs, other forms, other works. It is impossible to foresee what direction progress will take. What we have tried

to show is that this art of tomorrow will necessarily be different from that of today. If there is any truth in the saying that every people has the government it deserves, it is even truer that every civilization, every race, every epoch finds itself reflected as in a mirror in its architecture.

BIBLIOGRAPHY

History of modern architecture has been the subject of few books and most of these are quite subject to caution on account of bias.

Some data can be found in general history of architecture (see preceding bibliographies), and:

Choisy, *Histoire de l'Architecture.* I. II. Paris.
Hamlin, *History of Architecture.* New York.
Reinach, S., *Apollo* (*General history of the Fine Arts*), Paris, New York.

In the excellent series: *Ars Una*, with:

Armstrong, Sir Walter, *Art in Great Britain and Ireland.*
Dieulafoy, Marcel, *Art in Spain and Portugal.*
Hourticq, L., *Art in France.*
Ricci, Corrado, *Art in Northern Italy.*

All these contain extensive bibliographies and illustrations

Guadet, *Éléments et Théorie de l'Architecture.* Paris.
Greber, J., *L'Architecture Américaine* Paris.
Lübke, W., *Geschichte der Arkitektur.*
Statham, H. H., *Modern Architecture.* London.

Art, Architecture, in Encyclopædia Britannica.

Special Subjects:

Garnier, Ch., *Le Nouvel Opéra de Paris.*
Sédille, C., *Architecture Contemporaine en Angleterre.* Paris.
The Works of McKim, Mead and White.
The Works of Charles A. Platt, of Ludwig Hoffmann, Bruno Paul, Alfred Messel, Gaspard André.
Biographies: Charles F. McKim, H. H. Richardson, D. H. Burnham, etc.

The architecture of the last fifty years or so can be studied only by illustrations and papers published in magazines such as:

The Architectural Review (with criticisms by C. Howard Walker).
Academy Architecture. London. Etc.
The American Architect.
Architecture.
The Architectural Record.
The Brickbuilder and *The Forum.*
The British Architectural Review.
L'Encyclopédie d'Architecture. Paris. (For the period 1860.)
Special numbers of *The Studio*, etc.

PART II

SCULPTURE

BY

LORADO TAFT

CHAPTER V

SCULPTURE

I. BEGINNINGS AND PROCESSES

It is our purpose to consider in this chapter some points of interest regarding the ancient and venerable art of sculpture. Just how venerable we may consider it depends, to be sure, upon our acquaintance, while certainly no one is wise enough to tell us how ancient it is. In every group of young people there are some who "just naturally" whittle as there are others who whistle; and so it has doubtless been since the beginning of time. At any rate the whittling started very long ago.

It is generally said that sculpture had its beginnings in religious worship, but it is probable that it was first employed, like color, on weapons and utensils and later in the adornment of the primitive home, a very compelling instinct in all races. Next, religion added its immense encouragement. In those early days people found mystery and divinity in a thousand things. The imagined spirit of tree or cave was crudely sketched by some untutored hand — a vague little image to be improved after a while by another; and thus figure sculpture was launched. It may be said that sculpture represents as a rule the things that are most important to a people — most loved or feared. It is a difficult and expensive art; one does not carve in hard stone or cast in metal without a purpose.

The Egyptians had an unusual incentive for vast activity in sculpture. Not only did they cherish a numerous pantheon of gods to be pictured and placated, but they early developed the belief that immortality depended upon the preservation of an abiding place for the soul. Naturally the body with which it had been associated in life was of first importance, and therefore the mummy was cared for with a reverence

which we cannot appreciate; but in addition to this as many portraits of the dead as could be afforded were carved with infinite pains, that the wandering soul might be sure to find somewhere a familiar lodging. Many of these early Egyptian portraits are of astonishing excellence.

The materials varied from wood to the hardest of diorite. With color added, the effect was amazingly lifelike; the *ka* must have been quite content with the pious fraud. Later this industry waned, and, while the gods continued to multiply, their hieratic forms were considered sacred and unalterable; thus progress was paralyzed. Between tradition and symbolism Egyptian sculpture, once so vivid, ceased to be a living art.

With the Greeks how different! Ever eager and alert, they found nothing too sacred for investigation, too established for experiment. The stiff straight figure from the tree-trunk advanced one day a timid foot, and that was a great step. Soon another innovator carved a right arm from a separate piece of wood or stone, and this permitted of a freer gesture. Then came the imaginative genius who proposed to make a "Victory" that would seem to fly. Little could he foresee the "Nike of Samothrace," but he was doing his best and bringing her nearer.

And all this time the exultant Greek youths were singing their choruses and meeting in splendid rivalry in the gymnasia. Physical beauty was a cult with those simple people; starving and mortifying the flesh to the glory of God had not yet been invented. So the sculptor had frequent opportunity to see the finest athletes in action; to study and appraise them. He knew the human form and structure by heart; no wonder he made progress! We are asked to believe things almost incredible of those astonishing men. Their products are wonderful enough; yet we are told that these figures — even the finest of them — were never modeled in clay but were cut directly in the marble without other guidance than the inward vision. Of course this is the popular belief about all

sculpture; in the poem "The Sculptor Boy" sits down beside his block of marble, falls asleep, and dreams of "an angel fair"; awakening, with a few quick, nervous strokes he releases her from the unwilling stone. Not even a row of stars to suggest that time has elapsed! This may be all right for poetry, but in the prose of studio life it is a different matter. The modern sculptor takes no such risks; that pure marble of Carrara is entirely too costly for experiments, and today we make our studies in humbler material. We know that in time the Greeks discovered and employed the mechanical methods of transfer which we use practically unchanged today.

A few words regarding the processes of sculpture may be of interest. Supposing we wish to model a head. One uses a bust-stand made as follows: a board a foot or more square is the base; a piece of scantling is convenient for the upright support, and across this is fastened another piece a little shorter than the width of the shoulders. If there are to be no shoulders, no need for the cross piece. In any case it is advisable to nail the standard very securely to the board and equally desirable to prolong it at the top with a short section of lead pipe, perhaps six inches long. Crown this achievement with a block of wood also firmly nailed and you have the skeleton required. The wood corresponds to the skull and the lead pipe represents the cervical vertebrae, strong enough to carry the weight of the head, yet flexible.

One now takes the clay — softened to the proper consistency with water — and builds up shoulders, neck, and head, pressing the clay firmly upon the supports and kneading it together. It will be found that the average head is egg-shape. Some are long and some approach the globular and in the case of very prosperous subjects the large end of the egg may be underneath. The sculptor now locates the eyes and gouges out the sockets — beginners build the eyes out as did the Egyptians and early Greeks. The ears are stuck on and a casual nose adds to the promise. It is impossible to model a good head in a few minutes or in the space of a paragraph.

Let it suffice to say that it is all a matter of drawing: profile, front view, and then a score — hundreds — of other views, even from above and below. The more accurate your eye the better the result. The beginner will find it a great aid to cut out of pasteboard a silhouette of his subject and keep adjusting this to the clay, or rather adjust the clay to it. How to make a correct silhouette is another story; we leave it to the artist's ingenuity.

Yes, the head is made up of outlines, but after all it is in the round, and here drawing takes a new form — a third dimension. As in sketching you have been told to avoid petty details and begin with constructive lines, so here we are to construct by means of the more or less obvious planes of the face. In the forehead these are frequently quite distinct and their definite edges are a great comfort to the groping sculptor. In the softer and more intricate parts of the face the artist must select and sometimes simplify to arbitrary planes. The nearer a head can be reduced to the terms of a crystal, irregular to be sure, but pronounced, the better for the precision of each step. These facets, separated by well-marked "watersheds," are the safeguard of all admirable sculpture. How distinct they are to remain, depends upon the subject and its proposed destination. An old or thin face will show the planes strongly emphasized. In youth or plumpness they may be very obscure, making the subject fascinatingly difficult. A dainty little head upon a mantel demands no such severity of treatment as an architectural figure to be seen from a distance. One of the joys of the sculpture of the Parthenon is the marvelous skill displayed in simplification, of reducing figures to their lowest terms, so that when in place they were "legible" from afar. The Gothic sculptors likewise had a notable instinct for this thing — an unusual training too, which may account for their skill. Many of their figures were carved in position, often at dizzy heights. One can imagine the apprentice caressing his precious work, "finishing" with meticulous strokes, only to discover that from below the

effect was all lost. Again and again he climbs the interminable ladders, experimenting, simplifying, and reducing the surface to broad planes which catch the sunlight and ample valleys whose shadows play their part in the composition. The work now "carries" like a successful poster and instead of a tangle and confusion to the eye it has become a distinct ornament. But whether his product be a saint on a pinnacle or a tiny carving to be held in the hand, the master workman is always revealed by his sense of structure as shown in the planes which he emphasizes.

As to sketching and composing in the clay and the building up of figures, their "armatures" and skeletons of electric wire or of heavier material, the fascinating perplexities of plaster-casting, and finally of "pointing" and marble cutting, not to mention bronze founding, all this will have to be sought in another book, such as "Modeling and Sculpture" by Albert Toft.

I have a friend whose memory is wonderful; he can repeat a hundred of the best poems in the English language; Keats, Shelley, Arnold, Lowell — these are his companions. Their finest thoughts are his possessions; no one can separate him from them. How I have envied him, I with no verbal memory at all! But I too have my solace; I have a portable art gallery in which to invite my soul; wherever I find myself I can set it up and turn on the lights and visit with the masters of the past. Fine old fellows those masters — they did a great deal for me, but how little they guessed it!

Let me show you my museum. It is no history of sculpture that I am trying to write — there are plenty of good ones — my desire is merely to point out a few things which I happen to enjoy. As to the basis of my selection I am myself a little hazy; like one's friends they present an astonishing variety. We are drawn to one man by his sturdiness, to another on account of his good humor or his nimble wit; we admire one woman for her spirituality, another for her homely virtues,

a third, it may be, for nothing in the world but her eyes or rosy cheeks! So while some of my treasures are recognized as the greatest sculpture that exists, others, it must be acknowledged, are but coquettish works which once caught my youthful and romantic fancy; I retain them for the pleasure which they gave me at twenty.

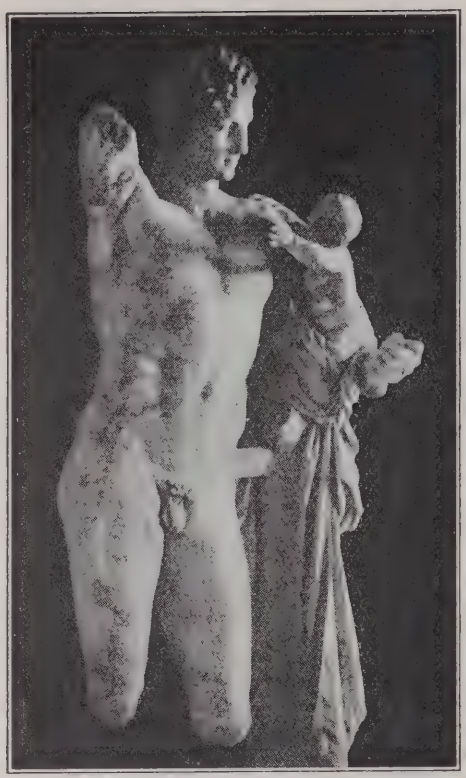
If certain of my favorites seem to demand explanation, I feel even more apologetic about some of the things which are left out. There are Egyptian sculptures which at times strike one as ideally perfect examples of the glyptic art; strange forms and mysterious faiths translated into the hardest of mediums — eternalized through infinite pains. But we might come so completely under their spell as to forget everything else and make our gallery entirely Egyptian, which would never do.

II. CLASSIC SCULPTURE

It is too bad to begin with the very greatest and end in an anti-climax, but perhaps my readers will not feel that we do so. Let us start with the Parthenon. Its frieze is one of the finest things that we have inherited, but five hundred and twenty feet of it is too much for my portable exhibit and I must acknowledge that I should not know which slab to select from that magnificent processional. No, let us rather turn to the great pedimental group of the eastern front. It pictures the legendary birth of Athena, the patron saint of Athens, to whom the Parthenon was dedicated. You recall the fantastic old story, that Zeus, finding himself indisposed one day, most unaccountably sent for Hephæstos instead of Æsculapius, the family doctor. The blacksmith god brought along his sledge-hammer and after a brief diagnosis gave his royal patient a tremendous blow on the head. Whereupon an even more extraordinary thing happened; Athena presented herself through the cleft skull, neatly dressed and fully armed. This occurence, "important if true," as the papers say, was counted very remarkable even on Olympus where

THREE FATES FROM THE PARTHENON

PLATE 80



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1. HERMES OF PRAXITELES
2. SATYR WITH A FLUTE
3. NIOBE CHIARAMONTI
4. DEMOSTHENES

mighty strange things were wont to occur. The gods were astounded and messengers were sent post-haste to spread the news.

How the main incident was treated by Phidias we do not know, for the central group was long since destroyed, but we may be sure that the good taste of the Greeks avoided all grotesqueness. Probably the goddess was shown standing by the side of her august parent. What we do have, to own and enjoy, is a number of the subordinate figures, including the beautiful Iris who so eagerly carries the tidings. Like widening circles upon the water the interest spreads. The first seated woman lifts an arm as in wonder; the second has not grasped the message. Beyond and aloof, lost in day dreams, reposes the personified mountain, "Olympus" — or "Theseus" if you prefer — one of the most satisfying statues in the world, a wonder of truth and of skilful interpretation. That the backs of these figures should be as carefully completed as the parts which were visible has often been commented upon. Some see in it a deep religious significance — that the sculptor was working for the sight of the gods. May it not have been simply a result of his method of visualizing the body as a whole and shaping it from all sides as he wrought? If he carved without a model this would be far easier than developing one side alone.

When near them I think the three figures called, for no reason at all, "The Fates," the most beautiful sculpture in existence. (Pl. 80.) Their glory of form and the sparkle of their draperies are obvious. The charm of harmonious line and particularly the varied responses to the proclamation are subtler qualities. "The one which is detached has heard the voice and turns with one foot drawn back as though she were about to spring from her seat," writes Dr. Powers. "Then the more passive sitting figure, already disturbed, though dazed and unconscious from what source comes her awakening; and finally a reclining figure leaning upon the bosom of the last, and wrapped in a slumber which is the most perfect

embodiment of languorous repose known in all art. She rests as one who dreams of heaven. Even the messenger of the gods may well forbear to disturb such a repose." Some share of this beauty of "The Fates" is apparent to every eye, yet study constantly reveals new charms. Simple in mass, the composition grows richer upon approach. The drapery is marvelous in its flow and its subtle blending of light and shade, offering happy effects at all distances. To know the sculpture of the Parthenon is like knowing the ceiling of the Sistine chapel; it is a liberal education and throws light upon any other work of art which one may study.

There is a figure which we like to attribute directly to Phidias. We call her the "Lemnian Athena" and hope that she is a reduction of that stately statue which the master erected upon the Acropolis for the Lemnians. She seems to us worthy of the tradition. For years the marble body stood incomplete in Dresden while the lonesome head was a treasured possession of Bologna. At last they were brought together — at least a cast of the head was found to fit perfectly the broken neck — and another triumph of ancient art was presented to the world.

Phidias and Polyclitus, the great sculptors of the fifth century B.C., were succeeded in the fourth by Praxiteles and Skopas. Praxiteles chose subjects very different from those which interested Phidias. The days of monumental grandeur were past. The later artist represented the gods, to be sure, but he selected the subordinate, more human divinities, and pictured them with a less reverent touch. Pausanias, who traveled in Greece in the second century A.D., tells us that he saw in the Hera Temple at Olympia "a Hermes of stone carrying the young Dionysos; it was made by Praxiteles." In 1877 a party of German archaeologists found this very figure amid the ruins of the temple. (Pl. 81 : 1.) The legs and arms were broken, but the body and head were intact. As fortune would have it, they even found the baby "Dionysos" later, used as a stone in the building of a wall. Thus the "Hermes" stands

today almost complete in the little museum of Olympia. He leans at ease upon a high stump over which he has thrown his mantle, and seems to be looking in smiling reverie at the quaint infant perched upon his left arm. The grace of his pose, the firm yet softly rounded forms, the combination of strength and gentleness so well shown in both the subject and the treatment, were a new revelation to the world. Here at last was an original directly from the hands of the great master. It was as fine as man had dreamed. If this was one of the minor works of Praxiteles, what must have been the beauty of his more celebrated achievements!

Here is another of those graceful, easy-going figures which Praxiteles introduced to the delighted world. (Pl. 81 : 2.) That they were great favorites is evident from the number of Satyrs and Fauns to be found in the gardens and galleries of Europe. If the originals are gone it is fortunate that many copies and variations remain to cheer us. Perhaps I should have chosen "The Marble Faun" of the Capitol, extolled by Hawthorne, but there is something even more charming to my mind in this adolescent figure. How completely joyous and fancy-free he is; how innocent of "the higher life" — and examinations!

It was a different mind which conceived the tragic group of Niobe and her ill-starred children; a different hand which carved them. Was it Skopas? We know that he excelled in the dramatic as Praxiteles did in joyous themes, but of all his somber visions not an original remains. A fine copy of the monumental mother and child is to be seen in Florence, but the most beautiful fragment is that of a daughter in the Chiaramonti gallery of the Vatican. (Pl. 81 : 3.) The picture gives but a hint of its rich drapery, so like that of the "Iris" of the Parthenon.

I am sure that many of my readers will wonder at my including the next figure. (Pl. 81 : 4.) "With a world of beauty to choose from, why fill up with such things?" you will say. Quite right, quite right. I acknowledge that I should never

have done so at your age and if he does not appeal to you, you need not give this old man another look. But let me explain that all through the years I have been studying portrait statues — thousands of them — and I have become so tired of the vehement, assertive ones that the quiet dignity of the "Demosthenes" is increasingly welcome to me. There are so many modern figures which seem concerned lest you miss them; they gesticulate like "cabbies." They weary me, these auctioneers on their soap-boxes! I come back with infinite relief to the self-respecting presentments of the earlier days. Yes, I know it was Demosthenes who said the secret of oratory was "action — action — action." Just the same I am glad that his sculptor knew the difference between oratory and monumental art!

We read that soon after the death of Alexander there was in Macedonia a certain powerful general named Demetrius Poliorcetes and that in the year 306 B.C. he engaged in a great naval battle with an Egyptian fleet. Fortunately for us and for the cause of art he was victorious and sent the foreign invader about his business. Demetrius became King of Macedonia, and, as was the custom of his time and country, provided a votive offering to be erected in the sacred island of Samothrace. (Pl. 82 : 2.) A coin of his reign shows the figure upon the prow of a vessel, with wings extended and trumpet in hand. Unfortunately the arms, the trumpet, and even the head are lost, but the statue is still triumphant. Compare it with the ordinary American "soldier monument" to see where *we* stand in the story of the fine arts. You can imagine the illusion of the plunging vessel with this superb creature lightly poised upon its prow. There is rush and impetuosity in her every line. The eye wanders with delight over the sweeping folds of the drapery, following them around the magnificent figure. Behind, the garment is blown out into great fluttering masses of singular beauty and variety. Everywhere is that indescribable play of light and shade which sculptors persist in calling "color," as illusive as the

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1. VENUS OF MELOS
2. VICTORY OF SAMOTHRACE
3. AUGUSTUS
4. "VIRTUE" from Fonte Gaia

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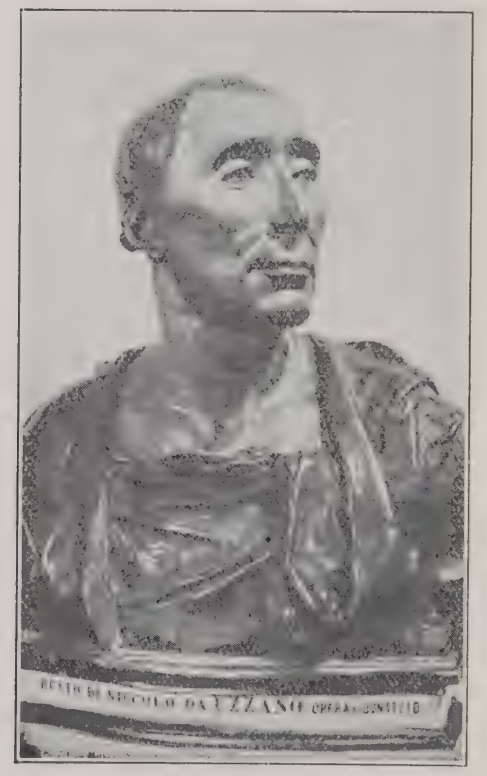

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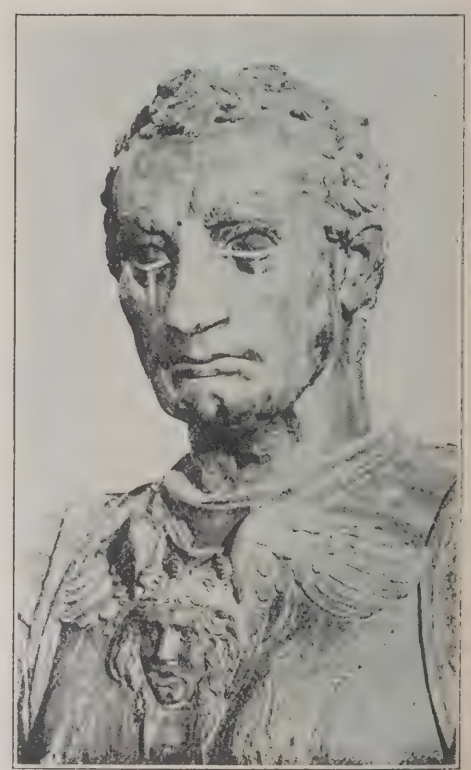

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1. ST. GEORGE, Donatello
2. IL ZUCCONE, Donatello
3. BUST OF NICCOLO, Donatello
4. HEAD OF GATTAMELATA, Donatello

reflection of lightning on storm clouds. Over the bosom and waist the drapery is thin and pressed close to the body, allowing the noble form to show through. It is a figure worthy of a goddess, the expression of perfect adequacy.

The "Apollo Belvedere" has been written about and talked about for four hundred years. Its once high position in public esteem has been sadly shaken, but today we recognize the figure as a fairly good copy of a much finer work. The sculptor who restored the "Apollo" gave him very long hands and put a fragment of a bow in one of them — the left — to indicate that he had just sent an arrow at some enemy. This explanation seems to make good sense. He advances with a great stride and holds his head high. And what a magnificent head it is with its clean-cut features and its far-seeing eyes! If Apollo's look is rather disdainful, it has a right to be, for the Sun-god was invincible.

It is our misfortune that we know Greek sculpture mostly through Roman copies. Some of these reproductions are good and some are very poor. The dainty little figure which we know as the "Diana of Gabii" seems beautiful enough to be an original, but it is probably only a respectful copy of a still finer work. As a rule, Greek statues are very impersonal; their beauty seems "typical" rather than individual; one does not think of them as real people. But here is a marble girl with whom one could easily fall in love — as many an art student has done in the past and many another will in the future until the end of time. One of these enthusiastic admirers describes her as follows: "Nothing could be more graceful than her simple, easy pose, the attitude of a maiden goddess finishing her toilet. Her head, turned to the right, is carved with inimitable refinement. The delicate half-parted lips recall the praises which the ancients lavishly bestowed on the statues of 'Artemis' by Praxiteles."

Many there are who consider the "Aphrodite of Melos" (Pl. 82 : 1) the most beautiful of sculptured forms. It is difficult to realize that it was not of the time of Phidias but a product

of the decadence, dating perhaps from about 100 B.C. Certainly its unknown sculptor was of heroic lineage and worked in the spirit of the mighty ones of the fifth century B.C. The queenly figure is shown with the lower limbs hidden in vague drapery; the glorious torso is quite revealed — as it would not have been had Phidias chiseled it. The head is in perfect preservation, one of the few which have survived the assaults of the centuries. Its poise and expression put to shame every Roman work with which we are acquainted. The features are models for all time; firm, gracious, mellow, they exemplify sculpture at its best. The far-away look with its hint of illimitable vision is combined with an expression of conscious well-being, raised to a superhuman power. The body is of heroic mould. The arms alone are lacking — and what a world of study their absence has occasioned! The proposed restorations are countless, but none is quite satisfactory. The question constantly recurs, could she have been as beautiful when complete as now in her magnificent mutilation? Despite all the clamor of modern insurgents the final test of a work of art is Beauty. Judged by this standard, where are the strenuous revolutionaries of today in a competition with the unknown carvers of the "Aphrodite of Melos" and the "Nike of Samothrace"? There is not a man living who can even conceive such beauty as is revealed in these triumphs of the past — much less bring it to visible realization.

It is no evidence of disloyalty to the radiant Queen of Love if one also confesses a great liking for that little lady whom we know as the "Venus de' Medici." There are different ways of being beautiful and this is certainly one of them! If you compare her with the Olympian "Aphrodite" of the early Greeks, she has undoubtedly fallen to a low estate, but as the exquisite rendering of an amiable human being she has a claim to our admiration. Did you ever pick up Hawthorne's "Italian Sketch Book?" The great American novelist was profoundly smitten with her charms. As I remember he comes

back to her in alternate paragraphs throughout a whole chapter, finally ending a discussion of something else with a delightfully irrelevant, "She has a dimple in her chin!"

If the "Venus de' Medici" is a Roman copy, what must the original have been? Some idea of its possible perfection may be gained from an exquisite head in the Boston Museum of Art, very similar in type but much choicer in workmanship. It may well be an original from some famous hand. The modeling of the features is incredibly fine; the technic of the hair a wonder. Is it not strange, however, that such an artist should make the two eyes so different? Do you suppose it was carelessness? Did he wish to avoid mechanical regularity? Or did "She" have eyes like that?

Once upon a time, years ago, the writer was called upon to conduct Augustus Saint-Gaudens through the Art Institute of Chicago. In a few minutes the tables were turned and the famous sculptor was showing the younger man about. A precious souvenir of the visit was a new appreciation of that other "Augustus." (Pl. 82 : 3.) Saint-Gaudens' enthusiasm made me see it, as it were, for the first time. Ever since it has had a beauty and a dignity which were not there before. Would that these words of mine might bear similar fruit!

III. SCULPTURE OF THE RENAISSANCE

There came a day when no more triumphal arches were erected in Rome, when no more statues were dedicated. A long period follows wherein I find no contribution to my art gallery. A refreshing slumber it was, of a thousand years, and then Sculpture awakened to a new life of marvelous beauty and vigor.

There were two men of the early Renaissance who made Michelangelo possible. Like him they stand out as artists whose thoughts were always essentially sculptural. Many others produced good work upon occasions, but even the most skilful of them sometimes expended vast effort upon

things which were not, and never could be, great sculpture. With these three, however — Jacopo della Quercia, Donatello, and Michelangelo — instinct seems to have been unerring. Their conceptions were monumental; their utterances unfailingly massive.

Della Quercia of Siena (1374–1438) was a wanderer. One of his greatest works is the doorway of San Petronio of Bologna, a mine of inspiration, which Michelangelo did not neglect while sojourning in that city. It is, however, the "Fonte Gaia" in Siena which offers me my next favorite; a sadly weatherbeaten figure is this "Virtue" (Pl. 82 : 4), but she delights me. The good cheer of her, the amplitude of her drapery, and the robustness of the carving are triumphs of artistry. Beloved of many is another work from the same hand, the tomb of Ilaria del Carretto, of Lucca. In this exquisite figure and the chubby garland-bearers which so mitigate the austerity of death one author has found the personification of spring and the promise of vernal resurrection: "When the first roses bloom in the hedges, those quaint sprays of her chaplet will unfold, a rose flush will creep down her white brow, the lids under the arched brows will lift, the tender bosom will rise and fall, and, sheathed in her green mantle, while the little loves swing their garlands about her, the spring will pass from the shades of the cathedral into the light and fragrance of blossoming vineyards."

Donatello (1386–1466) had a long life and covered a wide field. His interest matched his industry and both were insatiable. In the "St. George" (Pl. 83 : 1) we have his straightforward stone-cutter's art at its best. The conception is simplicity itself; the labor is reduced to a minimum, but how every stroke has told! The result is one of the world's favorites — the ideal Christian hero. He has not tried to deceive us into thinking his "St. George" a real, live man. It is evidently the figure of a man cut out of stone, and the sculptor has kept this in mind all of the time. The great artists have always worked in this way, respecting their material,

treating marble as marble and wood as wood, and making bronze figures in still a different fashion. They do not try to cut drapery as thin as real cloth nor make their statues look like "stuffed" men and women. No sculptor understood this better than Donatello, and no statue illustrates it better than his brave "St. George."

Another figure which I include among my favorites, but which you need not place among yours, is the so-called "King David" of the Campanile. (Pl. 83 : 2.) The picture shows an unprepossessing individual, but I assure you he is much better than he looks. At any rate he was admirably planned for his station in life. His niche in Giotto's famous tower is some fifty-five feet from the ground and, baldheaded and all, he is most effective in place. Why waste time whittling ringlets, thought the sculptor, when they will never be seen? The drapery is particularly fine — which is fortunate, since the statue is mostly drapery. With pleasant insistence the long lines lead the eyes to the strong old head, as in Albert Dürer's pictured evangelists. Donatello, usually so modest, was very happy over this figure, even a little assertive, for they tell us he used to swear by his faith in his "Zuccone" (Baldhead).

There was another field in which he was preëminent. Where, in even that child-loving age, will you find such expression of the merry turbulence of youth as he has given us? The famous frieze which he modeled and carved for a choir-gallery in the Duomo of Florence is one of the treasures of the world. Other sculptors have made prettier children, but this great man caught the zest and spirit of their play, and has given us some of the most joyous glimpses of young life that the world has ever seen. He simply turned the children loose on his gallery front and let them "perform." And what advantage they take of their freedom! Across the long space they pour, as if just let out of school, kicking up their heels and almost turning handsprings.

The reader is not expected to be enthusiastic over the charm of worthy old "Niccolò da Uzzano" (Pl. 83 : 3), but if

you should model a few hundred heads you would learn to appreciate the amazing characterization, the sincerity which we have here. The original has a touch of color and it fairly lives. Niccolò's eyes follow you around the great hall of the Bargello like a punctilious guard.

We are told by superior critics that Donatello's "Gattamelata" at Padua is the finest equestrian statue of the world. It is hard to believe, although it might be quite as difficult to name offhand a better one. Its pneumatic-tire effect is strange to modern eyes, but we are obliged to concede that the bloated warhorse is very imposing in mass and momentum. Beside it the silhouette of a recent equestrian statue is bound to look thin and stringy. As to the rider, there can be no disagreement; is it possible to imagine anything more convincing than that sturdy old boy? This grim head (Pl. 83 : 4) on the tower-like neck is one of the noblest things in our collection. Do not fail to observe the beauty of the decoration of the armor, so richly modeled and yet kept so low in relief that at a distance the structure beneath is distinctly dominant. Donatello was as great in this work, produced at the age of sixty, as ever in his life.

Here is one of the loveliest low reliefs I know, but it may as well be acknowledged to begin with that we are not quite sure that the fair "Saint Cecelia" is really the product of Donatello's skill. (Pl. 84 : 1.) It is not signed, and our chief reason for thinking that he made this head is the fact that it is so perfect — we do not know any one else of that time who could have made it. To the eye it is, of course, only light and shade, but what exquisitely refined lights and shades they are. Even in the cutting sunlight it would be the same — no black holes, but floating shadows everywhere, like a form seen in a mist. They talk about "atmosphere" in painting; this is atmosphere in sculpture. There is nothing that describes it so well as low, harmonious music. What an appropriate use of it we have here, then, where the sculptor is representing his ideal of the sweet patroness of music.

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1. ST. CECELIA, RELIEF, Donatello?
2. SINGING BOYS, Luca della Robbia
3. LAUGHING CHILD, Desiderio
4. HEAD OF GUIDARELLI, Lombardo

PLATE 84

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1. APOLLO, Michelangelo
2. MOSES, Michelangelo
3. A CAPTIVE, Michelangelo
4. A CAPTIVE, Michelangelo

Luca della Robbia (1400–1482) was born fourteen years later than Donatello. What friendly rivalries they may have had as the years went on we do not know. One of them is pleasantly evidenced in Luca's first public work, the "Singing Gallery," made to face that of Donatello, across the aisle of the Duomo. In a time when art meant so much, discussions must have run high as to which was the finer achievement, but we need not decide between them. Luca had the happy thought of illustrating the fine old psalm about praising the Lord: "Praise him on the psaltery and the harp," etc. So in each panel he showed a number of children playing upon instruments. A few are dancing, and there are two or three groups which are singing — the most wonderful singers imaginable ; you can almost hear them. (Pl. 84 : 2.) It is superfluous to call attention to the sculptural "color" of these reliefs, their charm of light and shade and of line.

Another work by Luca which memory recalls with pleasure is the "Madonna and Angels" of the Via dell' Agnolo. One of the joys of Florence is the profusion and unexpectedness of its sculptural decorations. Every street and alley has its embellishments of form which are not only highlights upon its architecture but upon the visitor's happy days. This precious relief is over a doorway, and is in the white and blue glazed terra cotta which Luca made famous. So eagerly desired were these works that the sculptor's nephew, Andrea, joined him and later Andrea's children, the studio giving employment to a large and prosperous family. I do not know that any one claims the "Visitation" at Pistoja as the work of Luca ; it does not matter which member of the family did it. Could anything purer and more radiant be conceived ? The famous "Bambini" of the Foundling's Home were made by Andrea. Everybody loves them. With such "samples" on the porch of the asylum one could imagine that the stock of real babies must have been rapidly disposed of.

Here is another little charmer which you will have no trouble in liking ! Who can resist the appeal of Desiderio's

"Laughing Child"? (Pl. 84 : 3.) The beauty of a smile is generally in its flash, its evanescence, but Desiderio has performed a miracle and given us a smile which lasts and is always fascinating. What a privilege to catch that fleeting look and perpetuate it for all time! Happy Desiderio!

They tell us that Donatello's young "David" was the first nude done since classic times — the first "conscientious nude," I suppose they mean, for even Niccolò Pisano made crude attempts at the naked figure. Donatello's youth is very sinuous and admirable, but that broad-brimmed hat as the only costume has always made him seem funny to me. I prefer Verrocchio's "David," odd as he is. I know that some dislike him. "He might have been modeled from the first butcher's boy who came along," says a critic, all of which one cheerfully concedes; but strangely enough the same might be said of any other "David" — butcher's boys being human. Yes, Michelangelo's "David" may have been just a butcher's boy plus Michelangelo (quite an important addition, to be sure). But there is something so jaunty about this unformed youth that I have liked him from the start; and then there is a vague smile upon that young face which gives me a thrill — it has in it a hint of the mysterious smile of "Mona Lisa." Verrocchio, the pupil of Donatello, was the teacher of the immortal Leonardo.

Perhaps it was Verrocchio's "Colleoni" that we were trying to recall a while ago. You have a perfect right to prefer it to the "Gattamelata" if you wish to. I do, about half of the time. Verrocchio did not live to see his work completed and they do say that it was all the better for the aid of that Venetian sculptor, Alessandro Leopardi — that together they accomplished a finer thing than either could have produced by himself. At any rate the "Colleoni" is a wonder of dramatic power and sculptural expressiveness.

Among the strange things which have seized my imagination and which come back to me with extraordinary vividness is this dead soldier of Ravenna. (Pl. 84 : 4.) The label reads

like an opera: "Guidarello Guidarelli, by Tullio Lombardo," and that is all I know of either of them, but there is something haunting in that beautiful dead face.

All that Michelangelo ever did might be welcomed in our collection. There is an unfinished and little known "Apollo" (Pl. 85 : 1), which is quite as fine as the famous "David." They call it "Apollo," but any other name would do as well, since one can like it for itself and not for any implication. Then there are the two "Slaves" or "Captives" (Pl. 85 : 3 and 4) for the great tomb which was never to be built — if you appreciate them you know what sculpture is. In my day in the Beaux-Arts there was an Italian model with a wonderful torso who used to come around and take the pose of the "Dying Slave" to perfection. I wonder what he looks like now! Study the shoulder and arm of the bent figure; their compactness is the epitome of great sculpture and their amazing richness of light and shade is comparable only to music.

The mausoleum to Pope Julius was in a sense the somber "leit-motif" of Michelangelo's years. Of all his sorrows this long-drawn-out disappointment was the greatest. He was finally compelled to bow to the inevitable and permit his "Moses," with attendant figures by others, to commemorate the intolerant but faithful friend of his youth. His conception of Moses (Pl. 85 : 2) is so exalted, so dominating, that the world has accepted it without question. It is the Moses of the ages. In its concentration it epitomizes the secret of the master's greatness. Its outline is the simplest. "It could be rolled down hill," as Rodin said, "without breaking any part." There is no trace of declamatory gesture. All the forceful lines are bent inward like springs; their vigor and their tense restraint are suggestive of immense power. Even the mighty, corded hands are quiescent and only the abrupt turn of the head, the piercing eyes and frowning brows give warning of the pent-up volcano within. Michelangelo had a great capacity for righteous indignation; he was not unlike the

so-called "meekest man" of Scripture. He put himself into this work.

Shall we count the Medicean tombs as one number, each, in our "catalogue de luxe?" "Day" and "Night," "Evening" and "Dawn" — and the form of a man between — what a symbol of life! (Pl. 86 : 1.) How we feel the suggestion of fleeting time, even though we do not pause to trace the full significance of the allegory! Lorenzo, Duke of Urbino, whom by artistic license the sculptor has made a thinker, sits between these splendid creations, "Evening" and "Dawn." The latter is returning to consciousness with a superb movement full of awakening strength. Yet it is an agonized awakening as of one who shudders to open the eyes. The chiseling of that wonderful face sums up the whole art of sculpture; it is done as only a master could do it. Two thousand years had passed since the man lived who could have made it, and his was a different ideal.

The figure of Giuliano has a less significant attitude than that of Lorenzo. He is more alive to the outside world. The subordinate figures are the marvelously modeled "Night" and the awe-inspiring "Day." The last, although but a rough-hewn block, is one of the greatest of Michelangelo's works — it could not be more impressive were it finished with the exquisite delicacy of the "Night." The powerful arms seem ready to throw off an enveloping mantle which impedes this giant of toil. The suggestion of great physical energy momentarily restrained could not be more complete. It will be seen that Michelangelo's conception of the figure was very different from that of the Greeks. They gave calmness and serenity to moments of action; the Christian sculptor, on the other hand, has shown emotion and struggle even in sleep.

The same chapel contains a majestic Madonna. (Pl. 86 : 3.) She sits in regal serenity; the turn of the body, the bend of the neck, the dignity of facial expression, and above all the sculptural integrity of the conception, reveal the art of Michelangelo and no other. On either side is the figure of a

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1. TOMB OF LORENZO DE MEDICI, Michelangelo

2. VIRGIN, Nuremberg

3. MADONNA, Michelangelo

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1. NYMPHS, Goujon
2. THREE GRACES, Pilon
3. VOLTAIRE, Houdon
4. NEAPOLITAN FISHER BOY, Rude

saint by an inferior artist. The contrast of their treatment in drapery, in face and hands, is a lesson in technic. When compared with the massive simplicity of the "Madonna" they shrivel into intricate insignificance.

Let me show you another Madonna by a German contemporary of Michelangelo. (Pl. 86 : 2.) What a distance separates them, and yet who shall decide which had the higher ideal? There is much of beauty in German sculpture, but we must limit ourselves to the "Virgin of Nuremberg." Who created this pure face — was it that rioter and renegade Veit Stoss? Did he expiate his crimes in this one supreme prayer?

It is disgraceful to leave out all of the glorious Gothic treasure, but, as was earlier suggested, its most beautiful sculpture is perfect only in place. It is liable to appear awkward and ill at ease if wrested from its environment and put under a microscope in a museum. Old Claus Sluter likewise is one of my particular joys, but I hesitate to separate his honest works from his beloved Dijon.

In the French Renaissance we find much of elegance and a newly discovered grace, but few things which make a profound appeal. I think, however, forgetting for a moment Michelangelo's "sad sincerity" and the exaltation of the Nuremberg Virgin, that if we inquire what these men were trying to do, we shall say that Jean Goujon (born about 1515) was one of the masters and that for suavity of line and decorative charm the nymphs of the "Fountain of the Innocents" (Pl. 87 : 1) can find few rivals the world over. "He confined the forms of the Undines in the narrow spaces between the pilasters," rhapsodies Louis Hourticq, "and on their limbs, suppler than sea-weeds, he has thrown draperies as fluid as the waters that flow from their urns."

Another notable work of that sinister but fascinating period, is Germain Pilon's little group of the three Christian graces, made for Catherine de Medici. (Pl. 87 : 2.) These "decent graces," as Catherine insisted they must be, bore a bronze urn intended to contain the heart of her loving spouse. This was

the first time she had been sure of its possession and she evidently wished to make the most of it! The group is one of the most beautiful products of the French Renaissance, exquisite in line and light and shade from every point of view.

Many years intervene and much of "pomp and circumstance" likewise before we come to my next favorite, Pigalle's "Mercury." I confess that he is no near relation to the "Hermes" of Praxiteles and cannot be rated a great work among achievements of the first magnitude. He might even be called a little effeminate, but the lines are so felicitous, the modeling so good, and the expression so joyous that my early enthusiasm remains undiminished.

One of the greatest names in the French tradition is that of Jean Antoine Houdon (1741–1828). Amazingly versatile, he experimented in all directions. The year 1778 was a notable one in his busy life. Voltaire, eighty-four years of age, had returned to Paris to die. It was Houdon's good fortune to be granted sittings by the venerable author, and the speedy result was an astonishingly animated portrait — "the bust with the wig" — which was exhibited at the Salon of 1779. This head, familiar to every art student, recalls the description that the aged Voltaire left of himself: "They want to model my face, but for that purpose I should possess a face. My eyes are sunken deep, and my cheeks are like so much old parchment badly glued on some old bones supported by nothing!" Out of such material did the sculptor create his great work, the famous seated statue of Voltaire. (Pl. 87 : 3.) There is nothing finer in French sculpture. It has the fundamental greatness of a sculptural thought: compactness of mass united with charming variety of detail. Over the entire surface the eye roams gratefully, ever finding new delights of blending half-tones. Nowhere is there a discordant note; the statue has atmosphere — what the painters call "quality." But beautiful as is the drapery in itself, it is admirably subordinated; its lines lead persuasively, irresistibly, to the alert, smiling, cynical face. Not only has the master known how to

clothe the worn-out frame with grace and almost majesty, but by some strange craft he has put the very look of a soul into that wizened countenance. Its power has been summed up by Claude Phillips where he refers to "this keenly interrogative marble — with the glance of ice and flame."

IV. MODERN FRENCH SCULPTURE

Another French sculptor who has all my enthusiasm is François Rude (1784–1855). He was forty-seven before he enjoyed any wide popularity, which was won through the exhibition of that delightful figure, the "Neapolitan Fisher Boy." (Pl. 87 : 4.)

Then followed the great achievement which was destined to be known, if anything is, as the masterpiece of French sculpture. The Arc de Triomphe had been begun by Napoleon in 1806 as a monument to his victorious army. Interrupted and pushed forward from time to time by men of various intentions and tastes, it stood in 1832 still unfinished and without sculptural decoration. The two groups on the west front were now ordered from a sculptor named Étex; one on the east façade from Cortot, and Rude was commissioned to make the fourth. In five years he gave to the world the group variously called "Le Départ" and the "Marseilleise." (Pl. 88.) Today the three other groups are hardly noticed — occasionally one looks up the names of the authors. The name of Rude will be remembered long after these stones have crumbled. With the picture before you no description of this sculptural "dreadnought" is necessary. What greater privilege could an artist crave than to be able thus to embody a nation's enthusiasm — to create an appealing symbol and so to charge it with emotion that countless generations of men shall be thrilled by it?

Barye created a hundred "masterpieces" and was followed by Frémiet, the nephew of Rude, who, throughout a long life, led the animal sculptors of France. He did with perfect science

many fine things; also much that was melodramatic and unworthy of his art. Once or twice he attained to grandeur, as in his noble "Louis d'Orléans" (Pl. 89 : 2), who keeps lonely watch in the courtyard of the restored château of Pierrefonds. The sculptor knew his history and archaeology as he knew anatomy, and created here an impressive personification of feudal life. Louis d'Orléans was the builder of Pierrefonds; the bronze "Louis," which has in the highest degree the aloofness, the impassivity, of great monumental art, puts a soul into that grim pile — is a veritable "genius of the place."

For many years Paul Dubois (1829–1905), the Director of the École des Beaux-Arts, was the recognized head of the "new movement." His "Young John the Baptist" had proclaimed a fresh form of artistic salvation and the "Florentine Singer" had more definitely revealed the source of his inspiration. These were succeeded by his *magnus opus*, the tomb of General Lamoricière at Nantes (1876). At one corner sits "Military Courage" (Pl. 89 : 3), a hero whose watchful eye and resolute mouth promise well for the country's defense. This figure was no doubt inspired by Michelangelo's "Thinker," but Dubois has borrowed like another Shakespeare — what he has taken he has made completely his own. The artist's conception of "Faith," a slender girl with pure face and clasped hands upraised in prayer, is a new and precious type, perhaps the most original of all these sculptural thoughts. Venerable "Meditation" with furrowed brow is no less elevated, although less appealing. Finally, worthy to be called "greatest of these," is all-beneficent, all-satisfying "Charity" (Pl. 89 : 4), one of the choicest creations of modern times. The simplicity of contour; the rich beauty of modeling of the arms and of those irresistible babies; the serene unconsciousness of the pose and expression, are worthy of all praise.

Dubois' "Jeanne d'Arc" (Pl. 89 : 1) like every work of lasting value, requires time for its full appreciation. Its direct-

THE DEPARTURE, Rude

PLATE 88

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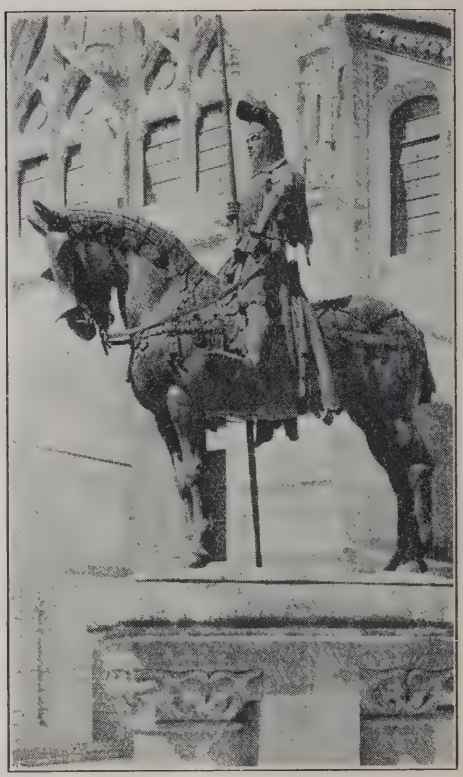

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1. JEANNE D'ARC, Dubois
2. LOUIS D'ORLEANS, Dubois
3. MILITARY COURAGE, Dubois
4. CHARITY, Dubois

ness is almost disconcerting. This is not the Joan of the stage. She does not shout at you like so much of French art — not even is her mouth open! She does not brandish her sword; it is lifted to heaven, and all unconscious of spectators the maidenly face is turned upward "whence cometh aid." "Not in my strength, but in thine, O Lord," is what she seems to say.

One is grateful to Chapu for two beautiful figures. His "Joan of Arc Listening to the Voices" (Pl. 90 : 1) is perhaps the best known in America of all modern French sculpture. In its compactness, its union of strength and delicacy of modeling and its spiritual content it is well-nigh perfect. The figure of "Youth" ("La Jeunesse") (Pl. 90 : 2) is the ideally appropriate memorial to a brilliant young painter, Henri Regnault — one of the last victims of the Franco-Prussian war — and to his colleagues. This monument stands in the cloistered "Cour du Murier" of the École des Beaux-Arts, an example of exquisite taste in design and of fitness in placing.

A work which has held my unwavering admiration is "The First Funeral" by Barrias. (Pl. 90 : 3.) As the name implies, it pictures the burial of Abel. In a group of three figures the legendary father of the race is shown bearing in his arms the limp body, while Eve bends to kiss the brow of her martyred son. When this great creation was shown in the Salon of 1878 it was enthusiastically voted the medal of honor of the year. Its sentiment appealed to all; the technical execution was beyond criticism. The contrast of the Adam's sturdy strength with the soft curves of the mother's form, and the complete deadness of the youthful figure; the father's questioning sorrow, the mother's choking grief, so sympathetically expressed — all proved this to have been a real labor of love on the part of the great man who had conceived it and wrought it from the stone.

Delaplanche's radiant "Aurora" (Pl. 91 : 1), still floats upon the pearly clouds of youthful memory. Her closed eyes and gracious aloofness, without a tinge of realism, made her always seem like a far-away, unattainable vision.

Of different intent were Falguière's richly modeled examples of "Parisian mythology." Little of the chaste Artemis of yore does one find in his "Diana" (Pl. 91 : 2), but what a proud bit of plastic art is this ! While "most zestful" as Brownell says, "in frankly carnal creations," Falguière now and then rose to heights suggestive, at least, of the spiritual. One of his last and most admirable works was the ideal portrait of "Henri de la Rochejacquelin" (Pl. 91 : 3), a young aristocrat who showed himself a hero in the war of La Vendée. There was a touch of the prophetic in this record of the past ; it had in it a blend of elegance and virility which France has once more revealed to the world.

Mercié, like Falguière, was a Southerner. At the age of twenty-three he won the Prix de Rome and from the Eternal City he sent back his "David After the Combat," one of the most pleasing works of its time. With what a proud gesture and confident swing of the lithe, boyish figure does the youthful hero sheathe his sword ! Altogether it is a thoroughly fine thing, whatever the debt to Donatello. "David" was followed by "Gloria Victis" (Pl. 90 : 4), which took all Paris by storm and won for the young sculptor the medal of honor. A dying youth is shown borne from the field of battle by a winged Victory. Following closely upon the events of 1870, this artist's dream of patriotism, this poem in bronze exalting the defeated, struck a responsive note in the heart of the French public and at once raised its author to a perilous eminence of popularity.

Then there was Saint-Marceaux' "Genius of Death Guarding the Secret of the Tomb" which in spite of its tanglesome name has ever had our unstinted admiration. That the sculptor had borrowed the pose from Michelangelo's Sistine athletes does not detract from its beauty ; the modern master has merely translated it into French !

Many of the able sculptors of France leave not more than a single work of great value. Competition is fierce and opportunity comes but once. In the Luxembourg, the superb

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1. JEANNE D'ARC, Chapu
2. LA JEUNESSE, Chapu
3. THE FIRST FUNERAL, Barrias
4. GLORIA VICTIS, Mercié

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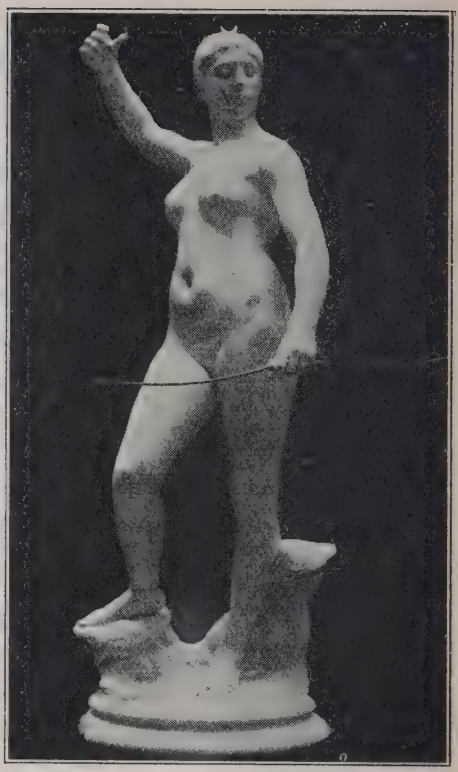

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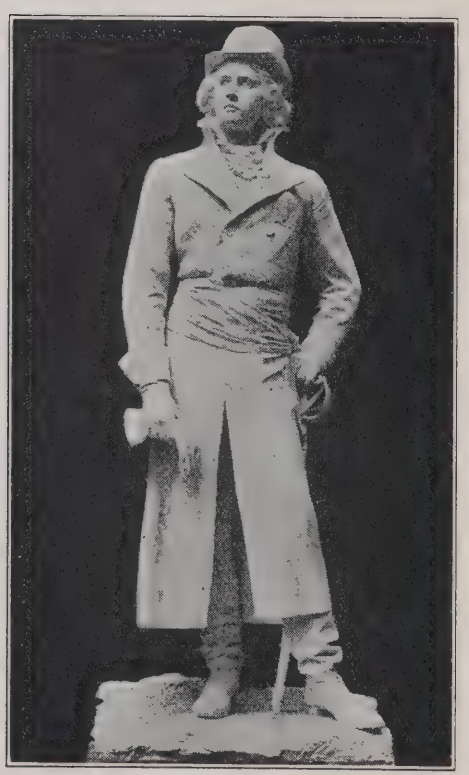

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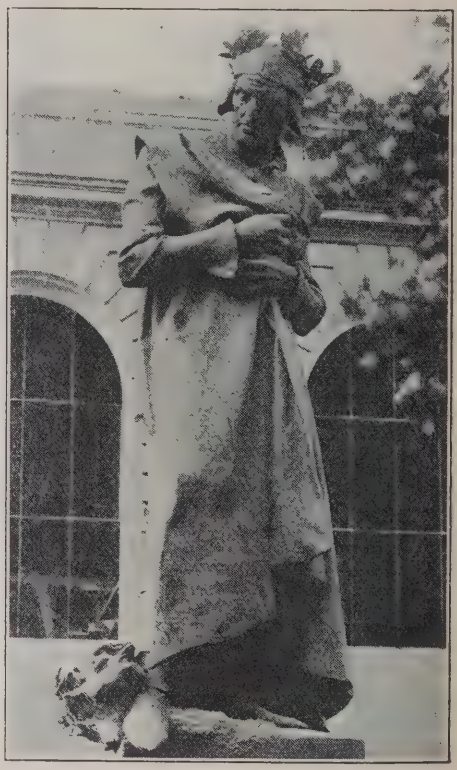

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1. AURORA, Delaplanche

2. DIANA, Falguière

3. HENRI DE LA ROCHEJACQUELIN, Falguière

4. DANTE, Aube

"Age of Iron" commemorates Lanson's brief day. Massoule's one great inspiration was the Gallic warrior which he so happily named "An Ancestor," while the ever ingenious Jean Dampt foreshadowed in his "Kiss of Old Age" the coming methods of Rodin. Aubé will be remembered and thanked for his admirably statuesque "Dante" (Pl. 91 : 4) rather than for the explosive "Gambetta." Sometime in the long ago an obscure sculptor, Schoenewerck — perhaps an Alsatian — created two lovely figures: "Au Matin" and the "Young Girl at a Spring." They have no great burden of significance but they are beautiful — most of us have not even that excuse for existence! They still abide in my collection.

In the fullness of time there came to France the need of new leadership. Rodin (1840–1917) appeared and for better or for worse the responsibility was forced upon him. His first important work, "L'Age d'Arain" (Pl. 92 : 1), exhibited in 1877, was a masterpiece of knowledge and of skilful modeling. He never did anything finer than this sincere study of the human figure. Devoid of all sensational characteristics, it would have received little attention from the public but for the inept charge of a writer that it was a cast directly from life. This was soon disproved and the master's craftsmanship was established. A couple of years later "John the Baptist" (Pl. 92 : 2) emerged. To the Parisians, captivated by the elegance and cleverness of the work then current, this strange thing seemed brutal and inexcusable. If you know the conventional churchly saints with their smooth limbs and languorous grace you can appreciate the shock given the faithful by this wild-eyed creature with a mania for saving souls. He was as unwelcome as was the original in certain exclusive circles of Judea. While a few talked of "integral naturalism," men of the "Beaux-Arts" pronounced the figure an ape ; but neither praise nor invective had any appreciable effect upon his calloused skin. He had come to stay. Today Rodin's "John the Baptist" is recognized as one of the milestones in the story of French art.

Then followed heads that were wonders; wonders of interpretative portraiture and wonders of modeling. They did not always please the sitters, but they fascinated the public. Among them it is difficult to make selection. Perhaps those that remain most securely in mind are the ascetic "Dalou," the "Puvis de Chavannes," almost Egyptian in its far-seeing serenity, and the incomparable "Mme. Vicunha," delight of all art students.

In 1895 the "Burghers of Calais" (Pl. 92 : 3) held the attention of the artistic world. Nothing more powerful, more original, has happened in our day. Never indeed in the history of sculpture had there been anything faintly resembling it. Like a row of gnarled tree-trunks seen at twilight; like a mass of stalagmites in a cave, those astonishing forms seemed to unite the appeal of the human with the strength of untamed nature. They were stupefying and they remain unforgetable. Out of them proceeded the "Balzac," an experiment in further simplification, which I have not added to my gallery. The same Salon, however, saw "Le Baiser," a miracle of radiant marble. I use the word radiant advisedly; this group is so atmospheric, so "enveloped," that it seems really to give out light like an incandescent mass — an alabaster lamp.

The "Gates of Hell," those far-famed bronze doors for a mythical art museum, were never to be completed, but from them and through them came many a notable work. Greatest of these is "The Thinker" (Pl. 92 : 4), a giant rugged as a menhir, "who," writes Louis Hourticq, "concentrates all his troglodyte strength and contracts his mighty muscles over some poor glimmer of a thought." It must be acknowledged that in his later years Rodin did many things that were fatuous and unworthy of his genius, but we owe him much.

It is a long way from primitive men to the gentle art of Rivière (Pl. 93 : 1), but here is sentiment, modernity and skilful technic. "Keeping the work white" is the preoccupation of the best sculptors today, just as, under other names, it always has been in the past. It means, of course, the sub-

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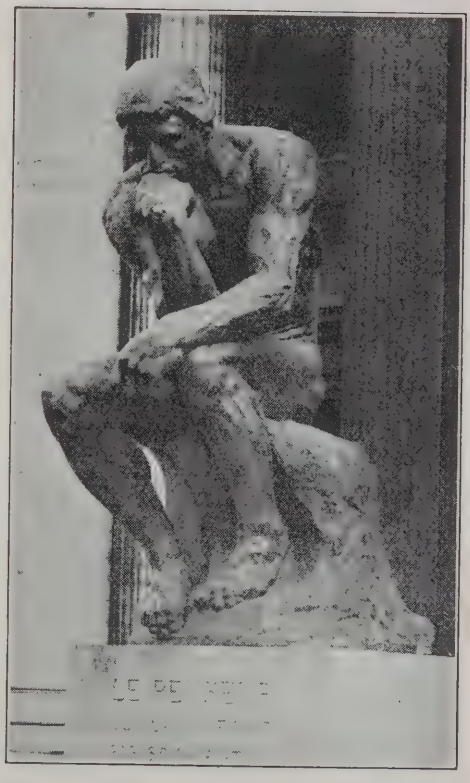

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1. L'AGE D'AIRAIN, Rodin
2. JOHN THE BAPTIST, Rodin
3. BURGHERS OF CALAIS, Rodin
4. THE THINKER, Rodin

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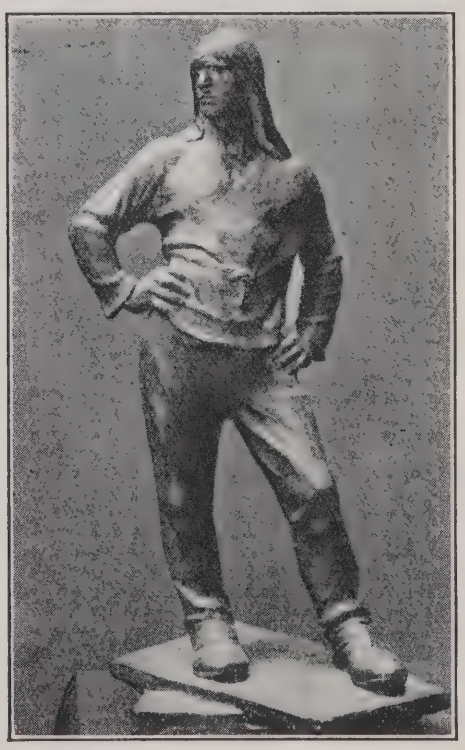

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1. LES DEUX DOULEURS, Riviere
2. CLAUS SLUTER, Bouchard
3. LE DEBARDEUR, Meunier
4. MEINE MUTTER, Mestrovic

ordination of nonessentials, the preservation of the integrity of the mass. One fills the deep and discordant hollows and one suppresses insignificant details. Rivière has done it admirably in this appealing group.

There is another Frenchman, still young, who finds themes all around him and treats incidents of daily life in a big, simple way. You will see his robust "Blacksmith" in the Metropolitan Museum of New York. My particular favorites, however, among the several fine works of Henry Bouchard, are two medieval subjects. One is the "Master Workman," a thirteenth century builder who is supposed to have erected the Sainte Chapelle in Paris. The sculptor shows him seated upon a block of building stone, watching with eager eye the climbing walls or spire. Bouchard comes from Dijon and presently his thoughts reverted to the grand old Fleming, Claus Sluter, who made the sculpture of Burgundy as famous as its wine. Of him, though quite without data, he has created a forceful likeness which will henceforth be Claus Sluter. (Pl. 93 : 2.) He could not look otherwise !

Last of my treasures from France, I wish I could show you a small bronze figure which seems to me "great," — a simple, monumental "Fra Angelico" by Jean Boucher. My deep admiration for this tiny image would sound extravagant if I put it all in words.

One who saw the sculptural possibilities of every day motifs was the great Belgian, Meunier (1831–1905). As sympathetic as Millet, his art has something likewise of Millet's classic sobriety and grandeur. To find in a dockhand — a "roustabout" — what Meunier did in his "Débardeur" (Pl. 93 : 3) and to make us see it, is a superb achievement.

Two strongly dissimilar works I wish to add from the recent years. One is Bistolfi's "The Offering," the one fine example of sculpture amid all the carvings of the ornate Victor Emmanuel Memorial which crowns modern Rome. Bistolfi is handicapped, like many another Italian, with the dangerous gift of facility, but now and then he curbs his nervous fingers

and produces a work of expressive beauty, of real emotional power.

Almost antipodal is the severe peasant art of Ivan Mestrovic (born 1883). The shepherd boy of Dalmatia has become one of the greatest personages in the art world of today. Often weird and fantastic, echoing the Byzantine inheritance which is his by right, his approach is always that of the true sculptor. Have I shown you anything more moving than this sincere, reverent tribute to his toil-worn mother ? (Pl. 93 : 4.)

My unique art gallery has a spacious annex filled with American works. Here are most of Saint-Gaudens' figures and reliefs and beautiful things by Daniel Chester French and from many gifted comrades of my younger years, as well as the art of an entirely new generation — but you must guess which these are ; my alloted space is more than full !

LINCOLN, St. Gaudens

ADAMS MEMORIAL, St. Gaudens

PAINTING

BY

BRYSON BURROUGHS

CHAPTER VI

PAINTING

I. ROMANESQUE

The history of art is the record of the changing tastes and ideals of humanity. In art progress is not to be looked for as in the sciences. One style grows out of what has gone before and causes the one that follows, but the latter does not necessarily improve upon its predecessors. A style mirrors its epoch and its race. The student of the history of art strives to appreciate each phase at its own standards.

No fixed dates can be given to movements as the old always lingers on beside the new. An arbitrary starting point for this survey of modern painting may be found, however, at about the year 1150 in France, when the Romanesque style began to be quickened by the new spirit, that some two generations afterward, was to be fully expressed in Gothic art. It was about the date of the three windows of the western façade of Chartres cathedral and these most sumptuous examples of the art of painting in colored glass can be chosen as particular points of departure as they show within their rigid Romanesque forms, like many other works of the time, the germs of the energy and the desire of liberty which were destined to be the prime traits of the modern Europeans and those who descend from them.

The Romanesque style, common to the whole of western Europe before its inhabitants had attained national self-consciousness, was, as far as its painting and sculpture was concerned, little more than the rude version of the art of Constantinople or Byzantium, then the capital of the Eastern Empire and the centre of Christian culture. Byzantium was the heir both of Greece and the Roman Empire and there the late manifestations of the arts of these civilizations met and merged with the art of the color-loving Syrians, giving birth

to a formularistic, symbolical style, founded on remote precedent rather than on nature and depending for its effect chiefly on gold and brilliant hues. It was occupied in translating pictorially the Christian dogma and found its perfect medium in decorations in mosaic — cubes of colored marbles and glass set into cement on the walls and domes. The rigid, unpliable nature of this process allowed but slight opportunity for the expression of the artist's individuality, but the result suited exactly the hieratic nature of the Christianity of Byzantium. (Pl. 95 : 2.)

This art was diffused throughout western Europe by means of ivory carvings, of enameled reliquaries and of illustrations in the books of devotion which though executed in water color on parchment were as stiff in aspect as the mosaics themselves. The Romanesque artist, who was generally a churchman, copied these illustrations to the best of his ability; pictorial art was then one with religion. But as early as the eleventh century something distinct enters into certain of the copies, — an agitation, a ferocity quite unknown to the Byzantine models. It was the spirit of the race emerging.

II. GOTHIC

The novelties first show in the sculptures. This has been explained by the fact that the sculptors were necessarily more inaccurate in their copies than the painters who had only to trace and enlarge, and these inaccuracies led the way to self-expression, often unconsciously. The painters soon followed, giving form to the new traits in enameling, book illustration and stained glass. The process of the last-named art grew naturally out of that of mosaic and enamels, and works like the windows on the façade of Chartres, our starting-points, were produced. (Pl. 95 : 1.)

The designing and decorating of the churches soon came to be no longer the work of the priests. The old ecclesiastical conventions were vivified by the lay-artist's observation and

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1. FRENCH XII CENTURY GLASS. ENTOMBMENT. CHARTRES
2 BYZANTINE MOSAIC, THREE SAINTS, CEFALU
3. ST. EUSTACE WINDOW (detail), XIII CENTURY GLASS

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1. JOACHIM AND ANNA AT THE GOLDEN GATE, PADUA, Giotto
2. THE MOURNING OVER CHRIST, PADUA, Giotto

his free outlook. The interest in life and nature, in his own thoughts and emotions, the prime characteristics of western civilization, was appearing in many parts of Europe at the same time. Modern art had begun.

To this epoch the name of Gothic has been given. The chief activity of the Gothic painter was in stained glass. The churches had no large surfaces for decoration, as the wall, no longer a support for the roof, was largely pierced by windows: the taste of the time and the dull winter days of the northern countries called for all the light that could be let in. Although the interiors of the great churches were probably entirely decorated with color and pattern, these windows became the chief field for the figure painter. In them were illustrated the holy stories and the lives of the favorite saints, which the people of the time craved to a degree that an age like ours can only faintly realize, looking upon them not so much as works of art but as materializations of the word of God.

In stained glass the artist's freedom is almost as restrained as in mosaic. Following the drawing of the cartoon, the glass had to be cut, painted and baked, then fitted together in grooved leads. The personality of the individual artist and his spontaneity were pretty well flattened out in so elaborate an operation. Stained glass, like mosaic, is successful only in those times when art is of the age as a whole and when genius is diffused.

Such was the case to a remarkable degree in the early thirteenth century in France. No reproduction can give an idea of the beauty of the windows of that period. Their color can only be compared to jewels and no words can suggest their celestial effect. Our illustration shows a detail of the St. Eustace window at Chartres. Its color is that of sapphires and amethysts interspersed with emeralds and a few rubies. In all the windows the story is illustrated clearly and very literally; all that was foreign to the main theme of the story was eliminated. The expression was always calm. Art was still put mainly to the uses of religion and the symbolical

interpretation of every subject gives a dignity and aloofness which is peculiar to all thirteenth century productions. It was an art that appealed to the intellect, not the emotions. The subjects are not presented as human experiences. The Madonna is not shown as a mother but as the Queen of Heaven; in the Nativity she sits or reclines apart meditating on her miraculous vocation. Even the Crucifixions serve but to remind the beholder of the dogma of atonement. Naturalism vitalized symbolism, but had not yet overthrown it. (Pl. 95 : 3.)

This serene and lofty style evolved into the realistic and intense expression of the fourteenth century and art tended to become strict imitation or unrestrained feeling. On this account, as well as the lack of large surfaces available for wall decoration in Gothic churches, and the limitations of the process of stained glass, the great development of painting did not take place in France but in Italy and the early state of the arts in that country must next occupy our attention.

Italy in the Thirteenth and Fourteenth Centuries

The classic instinct of the Italians, a heritage from the old Roman civilization, had never been entirely displaced by the calamities of the Dark Ages. In the thirteenth century, the Byzantine style, like that prevailing in the other parts of Europe, was practiced,[1] but alongside of it a debased form of Roman art had persisted. As in other sunny countries Gothic architecture had never taken deep root in Italy; the walls had always kept their old function and large surfaces for decoration were plentiful. Also a fitting process for wall painting had been in use since antique times, — namely fresco painting, painting on freshly spread, still wet plaster

[1] The Byzantine style of the thirteenth century was also undergoing changes. The popular, picturesque schools of the provinces were rapidly modifying the style of the capital. Byzantine works of this period show a naturalism which antedates its development in the West, and which became still more decided when the cheaper and freer process of fresco took the place of the expensive mosaic work in times of economic and political troubles. Byzantine art was in the process of a great renaissance when the Empire fell before the Turks in 1453.

in which the color is fixed as the plaster sets. Directness and alertness are essential to success in this medium, in which the tools are continually subject to the will and impulse of the executant. Fresco is the most unconstrained of processes and though pale compared to the splendor of mosaic or stained glass, it gave ready scope for the susceptibilities of the Italians.[1] This medium became the typical process of Gothic and early Renaissance Italy, just as mosaic was typical of the Byzantine style, stained glass of the pictorial art of thirteenth century French and oil painting of modern times, and in each medium the spirit of the style finds its fitting and perfect outlet.

The expressional possibilities of fresco were not revealed until the new outlook on life, spreading from France, had quickened the Italian genius. The revivalist movement in religion, — the overwhelming influence of Saint Francis, was itself a manifestation of naturalism and the revival of the arts followed in its train. A new style was demanded by the new era. Subjects from the life of Saint Francis for which there was no precedent had to be invented, and the holy stories, freed by the Franciscans from the old theological conceptions, called for a new iconography; each had to be reimagined from the idea of human emotion. The artist was forced to consult life instead of the Byzantine miniatures. The frescoes in the church of Saint Francis at Assisi are the great monuments of this time; they show that the Italians of the year 1300 had again become conscious of the world about them and of their place in it.

Rather than of the general characteristics, it will be better to speak of the individual painters who typify the art of this reawakening, and the first to be mentioned is Duccio di

[1] True or *buon fresco* was not practiced until somewhat later. In the early times the foundation only was painted on the wet plaster. The finishing coat was added in tempera, or water color in which the binding medium is some glutinous substance — egg, fig sap, honey or the like. Tempera was the process for all portable pictures and altarpieces until oil paint came to be used, but fresco determined the vision of the early Italians as mosaic, the Byzantines; and stained glass, the thirteenth century French.

Buoninsegna of Siena who appears more directly connected with the old movement than with the new. He must have been familiar with the excellent contemporaneous Byzantine illuminations. His work shows the sumptuous effect and the dignity of these but is transformed by the refinement and the religious emotion which was characteristic of all Sienese art throughout the two hundred years of its vitality. The Rucellai Madonna (Pl. 97 : 3), done in 1285, many today believe to be the work of Duccio, rather than of his Florentine contemporary, Cimabue to whom it was attributed by Vasari (writing about 1550) and later historians. In any event it is the oldest of the Italian masterpieces of medieval times which has come down. The picture reproduces pretty closely the Byzantine type, but the tenderness of the Virgin, the sweetness of the Christ child and the reverence of the attendant angels show the new spirit. Duccio's masterpiece is the great altarpiece of the Virgin which when completed was carried in procession, the dignitaries, and all the people of the town following, from the artist's workshop to its place on the high altar of the Sienese cathedral.

There was an important school[1] of art in Rome at this time, Pietro Cavallini, a mosaicist and fresco painter was its foremost exponent. He may indeed have been the most progressive painter of this age, — the mysterious master who bridges the gap between the old art and the perfect flowering of the new spirit in Giotto. Cavallini's career has not yet been reconstructed but it is known that he or his pupils were active in the decoration of the upper church of Saint Francis at Assisi (which was then the great clearing house for the artistic innovations of all Italy), at the time that Cimabue, under whom the young Giotto worked, was painting in the same place. The promising Roman school was cut short by the papal exile to Avignon and thereafter Rome produced no native artists of note.

[1] School, in this connection, is applied to a particular style, comprising the related theories and methods of the artists of one place.

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1. ANNUNCIATION, FLORENCE
Simone Martini

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2. FIGURE OF DEATH, FROM THE TRIUMPH OF DEATH, CAMPO SANTO, PISA
Follower of the Lorenzetti.

3. THE RUCELLAI MADONNA, FLORENCE, Duccio

4. THE MIRACLE OF THE SPRING, ASSISI, Giotto

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1. MAN HOLDING A PINK, BERLIN, Jan van Eyck
2. DECEMBER, FROM THE TROIS RICHES HEURES, CHANTILLY, Pol de Limbourg
3. GUIDORICCIO, PALAZZO PUBLICA, SIENA, Simone Martini

Florence was to become the capital of Italian painting. Cimabue, of the generation of Duccio and Cavallini, was the founder of the Florentine school. He is little more than a name to us. Dante wrote of him in the Inferno, "Cimabue thought to hold the field in painting, now Giotto has the cry so the fame of him is obscured." These lines, a few works, restored or contested, and his reputation are all that is left of him. His chief interest is in the fact that he was the master of Giotto, whose work marks the apogee of the whole Gothic movement.

"Giotto translated the art of painting from Greek into Latin" wrote Cennino Cennini, a fourteenth century painter, "and set it in modern guise and assuredly conducted it to greater perfectness than any ever." The grandeur of the old style lingers in his pictures, which however express the widest range of human emotions. His figures are reduced in number to the smallest requisite to explain the story he was illustrating and each figure is realized as a human being with a body that can move and a mind that can think. Of course neither he nor any of the fourteenth century painters observed things as we do today but he imagined them naturalistically. Like all Gothic artists he was intellectual and imaginative rather than sensuous; but he seems to have lived and felt all that he portrayed — the surprise of the spectators in the Raising of Lazarus, the affection and joy of Anna and Joachim as they meet at the Golden Gate, the pleasure of Anna's friends and the interest of the passers-by in the event (Pl. 96 : 1) — the agony of Mary and John and the Magdalen in the Mourning over the body of Christ and the varying intensity of the sorrow of the others (Pl. 96 : 2) — all of Giotto's creations in fact have the precise expression that is called for, in a way that no other artist has equalled. He had no scientific knowledge of anatomy or perspective, his landscapes were rudimentary, we may not agree with his ideas of physical beauty but we must allow that with Giotto our modern art takes its real place and that broadly speaking he surveyed its whole domain. (Pl. 97 : 4.)

The Florentine artists for three generations imitated Giotto with no noteworthy innovations. The influence of the Sienese school, which under its founder Duccio and his great disciples, Simone Martini and the brothers Lorenzetti, reached its highest point of excellence, made itself strongly felt on the Florentines as it did in all Italy and even in France where Simone worked in his late years, decorating with frescoes the papal palace at Avignon. Simone's influence was second only to that of Giotto. The magnificence of his decoration combined with his grace and tenderness make his paintings the loveliest of all the fourteenth century. His figures are exquisite and delicate, reminding one of the work of the French ivory carvers of the time with indeed something of the preciousness and elegance of those artists. They have little of the living, feeling spirit of Giotto's figures; nevertheless, one is convinced of their reality, though they seem not to be of our world. The Annunciation (Pl. 97 : 1) shows his characteristic qualities; he could also be virile and impressive when he wished, as in the portrait of a warrior riding his war-horse outside the walls of Siena. (Pl. 98 : 3.)

Pietro and Ambrogio Lorenzetti are the great naturalists of the Sienese school. They painted allegories of Good and Bad Government in the Siena Town-Hall with scenes of city and country life inspired by direct observation. They were the leaders in the decoration of the burial ground — the Campo Santo at Pisa where there is a Triumph of Death which has a picturesqueness and a naturalism quite akin to that of Gothic French. In one scene a hunting party comes upon three unburied corpses; Death, a terrifying hag with a scythe, unheeding miserable people who pray to her for deliverance, flies toward a garden where gayly dressed young ladies and gentlemen make love and music. (Pl. 97 : 2.) It is a crowded, disorderly composition, lacking alike the grandeur of Giotto and the loveliness of Simone, but it has an expression of great power.

In Duccio the ancient Byzantine tradition was vivified by

the spirit of naturalism; in Simone the Byzantine and Gothic currents made themselves rather equally felt; in the Lorenzetti the Byzantine inheritance is shown only in their decoration, spiritually they belong to the new style.[1] But it was the qualities of Duccio and Simone which fitted the Sienese temperament and during the whole life of the school, the Sienese painters, broadly speaking, continued on the path which those two had marked out. The medieval ideals persisted in Siena; her later artists responded only haltingly to the intellectual tendencies of the new time, and seldom made experiments.

These end the grand names of the fourteenth century. After Giotto, the greatest Florentine was Orcagna who combined some of Giotto's strength with something of the Sienese charm. But even without genius the fourteenth century Italians were great decorators. The monumental quality which they inherited from the Byzantine style gives a grandeur to their frescoes which the work of even a greater individual of a later time often lacks. Before taking up the following epoch it is convenient to return to the paintings of France and Flanders.

III. NORTHERN PAINTING, FOURTEENTH, FIFTEENTH AND SIXTEENTH CENTURIES

In early Gothic art, as has been said, the expression was mystical and symbolic. But as time went on the sacred subjects came to be conceived more and more as human experiences. The Virgin, in the thirteenth century the Queen of Heaven, later became the young mother fondling or caring for her baby. The divinity of Christ was lost sight of in the effort to make evident his human sufferings. Northern art in the fourteenth century was no longer subservient only to the Church, but became democratic, and subject to popular influences, such particularly as that of the mysteries, theatrical

[1] The latter artists and Simone and even Giotto himself owe much to the sculptures of Giovanni Pisano whose art was founded on that of France.

representations of the holy stories, naïvely conceived as contemporaneous events and acted in everyday costume. Realism[1] then began to appear first in the less important parts of the picture, — in the representation of minor characters and in the accessories. The unwieldy process of stained glass is altogether unfitted for a realistic style and the chief works of painting of this time are illustrations for books. It was at about the end of the fourteenth century that this realistic style in miniatures reached its full development, an art very much more human and passionate, though far less noble than that of early Gothic times. Its highest excellence is found in the Psalters and illustrated manuscript books executed for the first Burgundian rulers of the Low Countries. From one of these books our illustration of a hunting scene (Pl. 98 : 2) has been taken. In such a picture the artist, being unhampered by the old religious conventions, was free to exercise his observation without restraint — the dogs, marvels of fierceness and strength, urged on by the excited huntsmen, the boar in its death struggle, the clearing in the wood and the castle towering above the tree tops — all seem to have been actually seen and copied by the artist.

At the same time, however, there were some northern schools of an idealistic and religious tendency, the sources of which can be traced to the influence of Simone Martini and his pupils who worked in the south of France. The most famous of these was the school of Cologne in which city "Meister Wilhelm" (working in 1380) and his followers painted delicate and ecstatic little pictures of the heavenly hierarchy in mystical gardens. But overwhelmingly a vigorous realism was characteristic of northern painting, with its centres first in Flanders and Paris; then, as the English wars came on, in Flanders alone.

[1] Realism and Naturalism as applied to art both mean a faithful representation of reality. As a recent school whose practice was the delineation of fact and appearance has been called Realist, the word Realism is used in this article with that meaning. Naturalism is here used in the broader sense as comprising the reality of sensations as well as facts.

Hubert and Jan Van Eyck, the greatest of the early Northern artists appeared in the latter country at the time of the highest development of miniature painting, out of which art theirs proceeds. An innovation of supreme importance in the shaping of the modern style, namely, the process of painting with an oil medium, is attributed to the brothers Van Eyck. Oil had been used as a superficial glaze in the finishing of pictures otherwise done in tempera, as early as the tenth century. It gave a greater brilliance to the colors and protected the work against the dampness of the northern climate. Hubert, it is said, was the first to use oil as a vehicle for pigments in all the stages of a picture, and he and Jan carried the process to such perfection that their paintings today, five hundred years after their execution, are unequalled for lustrous, enamel-like surface and durability. It is impossible today for a satisfactory copy of their pictures to be made.

Oil painting permits a closer imitation of the effects of nature than does tempera and the Van Eycks were literal realists. Their masterpiece, executed jointly, is a many shuttered altarpiece, The Adoration of the Lamb, begun about 1415 by Hubert, and after his death finished by Jan in 1432. (Pl. 99 : 1.) The central panels of the lower part of the work illustrate a text from the Apocalypse, — "And lo, a great multitude which no man could number, of all nations, and kindreds, and people, and tongues stood before the throne and before the Lamb." The central figure of this great work is its weakest part. The Mystic Lamb whom the great concourse approaches is only a little woolly sheep standing on a pedestal with a stream of blood flowing from its breast! But the worshippers — the saints and the holy people who are coming over the flower-dotted meadow and through the rocky defiles! No one has painted their like, nor the like of the great stretch of country in which no detail has been slurred over down to a flower petal or a pinnacle on the most distant building.

Among the many panels of the altarpiece is one showing

the Annunciation taking place in a room of a house at Ghent; through the window is a view of one of the squares of the city and on the wall of the room hangs a hand towel on a roller, of the sort with which we were all familiar until a few years ago. One finds such realistic details in all of the Van Eycks' pictures. Everything that the tradition was not precise about — the backgrounds, the costumes, the doings of the secondary characters — served as an opportunity for the introduction of some contemporary custom.

The shortcoming of the Van Eycks was a lack of imagination. What could not be actually seen was weakly rendered; on the other hand art has never been so minutely imitative. Today they would perhaps be called in our slang *bourgeois;* their public too must have been in some ways like those of our time who get their delight in recognizing in a picture something with which they are already familiar. But all their minute and exact details were subordinated to a large expression of substance and character. Nothing could be more startlingly real than the portrait (Pl. 98 : 1) by Jan. One grasps the fact of the crafty, cruel nature of the sitter before one notices the furrows and tiny wrinkles of the skin.

The literalness of the Van Eycks responded to one aspect of the Northern genius; the native traits of fervor and imagination were exemplified by the contemporaneous school of the Walloon city of Tournai, which produced Roger van der Weyden. He was the pupil of Robert Campin, the so-called Master of Flémalle, an artist who though literal and painstaking in details was emphatic and emotional, even uncouth in expression. Roger had skill that was second only to that of the Van Eycks, but his problem was more complicated than theirs, — he sought to move men's pity. His pictures of the passion of Christ and the sorrows of the Virgin are as pathetic as any in all our art history. (Pl. 99 : 2.) He never failed to put in realistic and familiar accessories but his prime motives were compassion and piety. His art had such wide popularity that painting, not only in his own country but in

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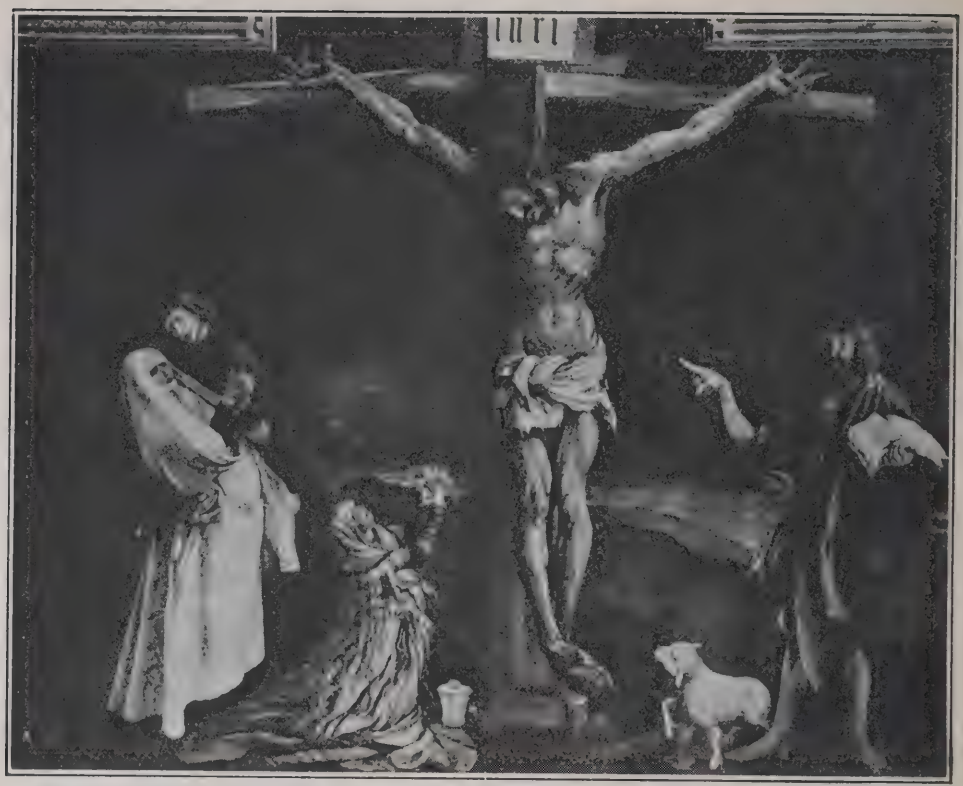
1. ADORATION OF THE LAMB (center panel), GHENT, H. and J. van Eyck
2. DESCENT FROM THE CROSS, THE ESCORIAL, PROVINCE OF MADRID, SPAIN
Roger van der Weyden



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1. CRUCIFIXION, COLMAR, Grünewald
2. THE HARVESTERS, METROPOLITAN MUSEUM OF ART, Pieter Bruegel, the Elder.

Germany and Spain as well, took on his characteristics. Even in Italy where he travelled in 1450, his influence made itself felt, as did also that of his younger contemporary, Hugo van der Goes representing similar traits, and that of his pupil Memling in whose work sweetness and elegance take the place of the poignancy of his master's expression.

The mixture of realism and compassion that Roger exemplified is found pretty generally throughout the course of Flemish painting from its beginning to the time that it was transformed by the ideals of the Italian Renaissance. Its evolutions can be traced in the work of the painters mentioned above and in that of Thierry Bouts, Gerard David, Massys, Bosch (who brought humor, fantasy and buffoonery into the tradition) down to Pieter Bruegel who was the connecting link between medieval painting, the purpose of which was the edification of the onlooker, and modern painting which pleases or interests without moral suggestions. (Pl. 100 : 2.) Bruegel was the starting point of Teniers, Brouwer and the whole Dutch art of the seventeenth century.

IV. GERMANY

At about 1475 the school of Cologne had come to its end. Three or four generations of artists in that city had painted the same subjects, — sweet saints and angels worshipping an ever mild Virgin and Child. The German genius, earnest and vehement, found a fitter outlet in the Flemish style and by the end of the fifteenth century, all of German painting was an offshoot of that art. Martin Schongauer was a follower of Roger van der Weyden. His greatest activity was engraving, in which branch the German artists excelled and by means of which their work came within reach of the middle classes, then rapidly growing in intelligence and importance. Matthias Grünewald of Colmar, the most ecstatic and uncouth of painters, was a disciple of Schongauer. (Pl. 100 : 1.) In Nuremberg worked an important local school which produced Albert Dürer. Hans Holbein came out of Augsburg; lesser

people were painting in many cities. All expressed the national characteristics in a style founded on that of the Low Countries.

Of the two greatest German artists Holbein was in good part the product of the Italian Renaissance (which in the course of commerce had early spread to Augsburg, his native town), though the foundation of his art was German and Flemish. His assimilation of Southern influence is shown in the elegance of his outlook in his historical compositions as well as in his marvellous portraits than which none so exact had been painted since the work of Jan Van Eyck. (Pl. 101 : 1.)

Dürer, a generation older than Holbein and of a more remote locality, accepted Italian teaching to a less degree and remains the most typical and the greatest of German artists. He combined, however, with the mystical and didactic spirit of Gothic times the curiosity and the self-confidence of the Renaissance. He was an engraver — perhaps the greatest of engravers — and his manner of painting shows the impress of that art. Strength, intensity and imagination are his great qualities. In the Four Evangelists (Pl. 101 : 2) the earnest and uncompromising attitude of the young Reformation is manifest.

The main difference between the character of the art of the North and of Italy should by now be apprehended. Italian art displays the "Classical spirit" — measure, restraint, good manners. When the art of the North became free of the direction of the theologians in the fourteenth century, it had no tradition of balanced values to fall back upon. Expression, not beauty was its aim. If one compares the Crucifixion by Grünewald (Pl. 100 : 1) with the same subject by Fra Angelico (Pl. 102 : 2) the difference between the two points of view becomes at once plain. Fra Angelico expresses the grandeur of sorrow. Christ is divine ; a noble group shows Mary swooning, upheld by St. John, Martha and Mary Magdalen ; two or three of the saints bow their heads or cover their eyes, but most of the onlookers seem to be meditating rather than to

be the spectators of an execution. The three crosses tower high in the picture and the low level horizon induces a feeling of tranquility. Grünewald on the other hand tears passion to tatters. He also treats his subject as a mystery but the expression is pushed to the point of caricature. The central figure is one of fascination and horror, a gigantic, livid corpse; the gaunt St. John the Baptist points out the fulfillment of his prophecy. The Virgin in a frenzy of agony faints in the arms of a delirious St. John Evangelist, and the background is murky night and the swift flowing river of Jordan. These two pictures[1] typify the great tendencies that have formed later phases of European art, — the realistic and expressive qualities on the one hand and the search for a balance of all qualities on the other.

V. RENAISSANCE

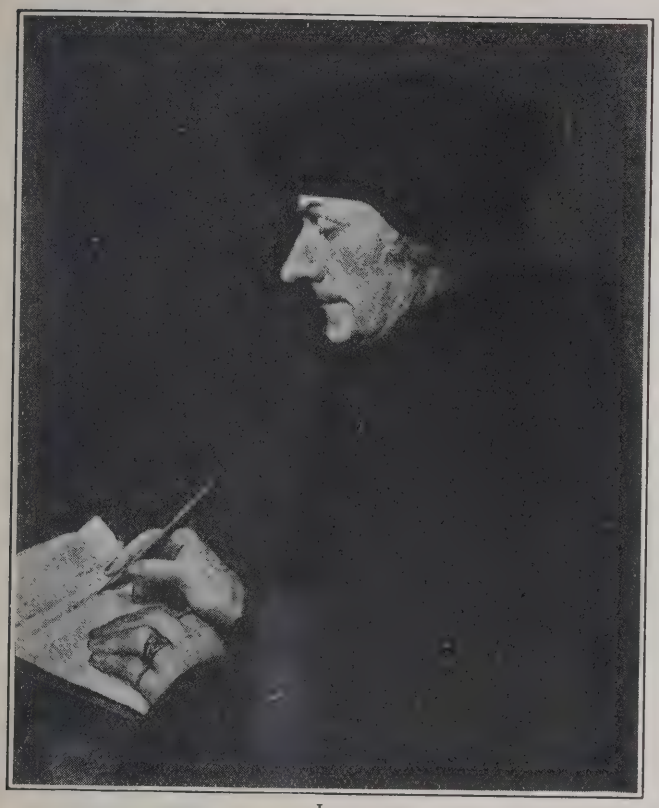
In the time we now take up, — the early fifteenth century namely, — Italian art was evolving its own version of the new naturalistic, worldly spirit in a style founded upon the arts of antiquity. Italy had passed out of the medieval stage; its people had developed to a point where its ancient culture could be appreciated. This was the beginning of the Renaissance (or Rebirth), a term applied to the fifteenth and the first half of the sixteenth centuries in Italy and in the rest of Europe to the sixteenth when its principles became general. The life of this world then took the place of the eternal life in men's thoughts; the philosophers of antiquity became the guides instead of the Church Fathers; the Pagan ideal struggled with the Christian ideal, and choice minds of the time tried to reconcile these contradictory points of view. Medieval collectivism was displaced by individualism and from this time on, the histories of individual artists occupy a more important place than heretofore.

[1]Of course they are extreme examples. No other artist anywhere is as strident as Grünewald and Fra Angelico is closer to the calm, symbolical idea of the earlier time than to the naturalists with whom he belongs in date.

Again as in previous ages of transition sculpture led the way. The Florentine sculptor, Donatello, inspired by antique remains to the study of nature, was the first to abandon the ideals of the fourteenth century. Gentile da Fabriano, a painter, and Pisanello, a medallist and painter, both active in the first quarter of the fifteenth century, had many realistic traits like those of the north, suggesting indeed at times a direct influence. But the great naturalistic line of the Renaissance painters was inaugurated by the Florentine Masolino and his great pupil Masaccio, both impressed by the sculptures of Donatello. Masolino began as a painter of the late Giottesque tradition but ended as an artist of the Renaissance. His Baptism of Christ becomes for the first time a pretext for the introduction of nudes for their own sakes. His figures however are isolated units, in the fourteenth century manner. The task of first making a picture in which each person takes his place as a part of the homogeneous action of a single scene, as well as atmospherically in relation to the other items of the work, fell to Masaccio whose paintings in the church of the Carmine at Florence made that place the academy for progressive painters of Italy for more than three generations.

Masaccio combined the austerity of the epic style of Giotto with his own new appreciation of natural forms and real effects of space. At about the same time Jan Van Eyck with a far more exact realism was solving the same problems; but in comparison Van Eyck's results appear prosaic. Masaccio's pictures are not realistic but interpretations of nature; he gave majesty and simplicity to each subject. The way in which he bound indissolubly together figures and landscape is seen in his picture of Christ bidding Peter to pay the tax gatherer (Pl. 102 : 1), and his tragic power is nowhere better shown than in the Expulsion from the Garden, the earliest life-like treatment of the nude since Classical times.

Masaccio's influence forced the rapid abandonment of the old mystical style. The Sienese and the Umbrian schools



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1. ERASMUS, LOUVRE, Holbein
2. ST. JOHN EVANGELIST AND ST. PETER, MUNICH, Dürer
3. JEREMIAH, ROME, Michelangelo
4. MONA LISA, LOUVRE, Leonardo

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1. THE TRIBUTE MONEY, FLORENCE, Masaccio
2. CRUCIFIXION, FLORENCE, Fra Angelico
3. PARNASSUS, VATICAN, ROME, Raphael

alone remained apart; they were but slightly modified by the new spirit and one great artist in Florence, Fra Angelico, the typical Christian painter, produced many beautiful pictures which can be classed more readily with the works of the late Giottesque tradition than with the Renaissance. (Pl. 102 : 2.) He was a mystic inspired rather by celestial visions, than by the world about him, one would say, but in his later years he also accepted naturalism, reconciling it to his own religious expression. Broadly speaking, during the second quarter of the fifteenth century, the medieval traits disappear before the scientific spirit and the desire only to interest and please.

In this movement the nimble-minded and energetic Florentines took the lead. They had a talent for deduction; they studied the principles of art. The scientific spirit was the prime characteristic of Florentine art and it reached its culmination in Leonardo da Vinci.

Perspective, anatomy, character, expression, landscape, these were the pursuits which displaced the decorative beauty and tranquility of the fourteenth century. The perspective which had been worked out by Jan Van Eyck in Flanders, though often plausible, was founded on the observation of the thing before him which he was painting; the Florentine Uccello discovered the laws of perspective, so that the correct appearance of even an imaginary building could be given. The interests of these artists were universal, — most of them were architects, sculptors, and metal workers as well as painters. All were anatomists. Castagno made notable achievements in delineation of character; Antonio Pollaiuolo excelled in the expression of muscular effort; Fra Filippo Lippi combined charm and tenderness with the strength of his master Masaccio; Verrocchio developed the study of landscape and drapery. It was a time of great energy and high anticipation.

The scientific outlook made itself felt in other places as well. The Umbrian, Piero della Francesca, haughty and impressive, was a student of perspective and composition equal-

ing the Florentines, and his pupil, Luca Signorelli, in his study of anatomy and his love of energetic nudes, was the precursor of Michelangelo himself. Florentine influence, through the sculptures of Donatello at Padua, was a fundamental of the lofty and austere art of Andrea Mantegna, out of which the North Italian and the Venetian schools proceed.

In Florence, as the century advanced, the contradictory traits of the Renaissance, — Christian piety and Paganism, high thought and sensuality, the love of beauty and the interest in reality, — became even more apparent. The work of Botticelli is an example. His Madonnas and his Venuses are painted with the same ecstatic interest, and have the same subtle, troubling beauty and unexplainable melancholy. At the same time in Florence Domenico Ghirlandaio, the most matter-of-fact of her masters was working. His favorite motive was the stately ceremonious life of his city.

Leonardo da Vinci was contemporaneous with these two. In him "all the intellectual curiosity of the Renaissance, its dreams of glory and infinite progress, its enthusiasm for science and beauty were combined." He was at once the most poetical of painters and the most scientific, — the summing up of the endeavors of generations. He inherited Filippo Lippi's type of female beauty, — Verrocchio's mysterious twilight landscape, all the psychological and scientific experiments of Castagno, Pollaiuolo, Uccello and all these he embellished and endowed with his own sense of what was fitting and beautiful. At the same time he was one of the greatest of innovators. He developed Masaccio's rendering of the appearance and modelling of objects in the surrounding atmosphere to its logical conclusion and in one sense all subsequent painting proceeds from him. The method of earlier art was the filling-in of more or less flat color between outlines, after Leonardo the use of fused tones has been practiced, — "chiaroscuro" (as the painting of light and shade is called) with the outline showing only where colors or light and shade contrast. Leonardo's portrait of Mona Lisa, since

the time of its painting, has been without a lapse considered the most distinguished and beautiful of portraits. (Pl. 101 : 4.)

Somewhat younger than Leonardo was the other great Florentine personality of the Renaissance, Michelangelo, the most individual and independent artist of all our history. Unlike Leonardo who was the summing up of the efforts and experiments of many generations, Michelangelo appears as an isolated figure; certain traits in Donatello, Jacopo della Quercia and Signorelli, alone give promise of his overwhelming style. He was a sculptor primarily but he also made paintings — paintings which have the quality of sculpture, in which landscape, perspective and atmosphere play no part. He was interested only in the creation of a race of mighty giants who know only scorn and despair, or at the softest, a kind of sullen indifference. (Pl. 101 : 3.) With these superhuman creatures he peopled the ceiling and the end wall of the Sistine chapel and many a talented artist has sacrificed his real qualities in the impossible attempt to imitate their grandeur.

The third of the most famous artists is Raphael "the divine painter." His gracious and spring-like art is in expression the opposite of his stormy, gloomy rival, Michelangelo. He was an eclectic, taking what he required from any source, — from his own Umbrian ancestors, from antique remains, from Leonardo and Michelangelo, even from his followers, and all in the alembic of his happy nature was transformed into a perfection that no one has rivalled. He was not an innovator like Leonardo, rather a combiner, but he saw in the human figure and in its relation to its surroundings a suavity that no one else has been able to see. His facile art seems at times almost to solve the haunting problem of the Renaissance — the harmonizing of the contrary ideals of Paganism and Christianity. (Pl. 102 : 3.)

To account for the other great painters of the full Renaissance, it is necessary to look back to the middle of the fifteenth century when the North Italian school took its

rise at Padua. Dramatic intensity, a scientific outlook like that of the Florentines and a passion for antique sculpture were the salient traits of this school. Mantegna, its greatest exponent, made his imaginary figures appear like Roman statues, but his portraits are startlingly real. In each of his pictures he solved problems of anatomy, perspective, characterization and the fall of draperies. He was the first to apply to his wall paintings a perspective that simulates the perspective from the viewpoint of the spectator, a process that his indirect successor Correggio carried to an extreme point. Correggio painted the dome of Parma cathedral with figures of a massive type, after the manner of Michelangelo, sitting on clouds or floating in the air, all being foreshortened as though seen from the floor of the church. Correggio's nature, however, was widely different from that of Michelangelo. He was mild and sensuous and his greatest achievement, the play of light and luminous half tones over the bodies of naked women, was inspired by Leonardo's discoveries. (Pl. 103 : 1.)

Venice up to the third quarter of the fifteenth century was comparatively untouched by the intellectual novelties of the time. It was a commercial city directly in touch with the East and sharing the eastern taste for gorgeous decoration. The naturalism of the Gothic times had passed it by ; mosaic had been its favorite process. It was not until the latter part of the fifteenth century that the true Venetian school takes its rise.

Giovanni Bellini, its founder, was a fellow student at Padua with Mantegna and his early pictures show an affiliation with that artist. The typical Venetian love of rich color soon showed itself in his painting, however, and his progress was hastened by his adoption of the process of oil painting, which fitted better than tempera the expression of the Venetian genius. (Pl. 104 : 1.) The new medium was introduced into Venice about 1475 by Antonello da Messina, who in south Italy had come in contact with Flemish oil paintings and had

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1. ANTIOPE, LOUVRE, Coreggio

2. RAPE OF THE DAUGHTERS OF LEUKIPPOS, MUNICH, Rubens

3. ST. MATTHEW, BERLIN, Caravaggio

4. AESOPS (detail), MADRID, Velazquez

PLATE 103

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1. THE ALLEGORY OF THE TREE OF LIFE, FLORENCE, Bellini
2. FÊTE CHAMPETRE, LOUVRE, Giorgione
3. BACCHUS AND ARIADNE, LONDON, Titian
4. THE HUNT OF DIANA, THE BORGHESE PALACE, ROME, Domenichino

mastered the secrets of their handling.[1] Bellini began to paint oil pictures in which the effect of light and shade displaced more and more the old use of line and flat color, in a manner similar to the more profound and complete style that Leonardo had already worked out. Bellini, instead of giving greater substance and significance as Leonardo did, tended to merge details into general masses in a more emotional effect, which, easier to follow, has lived on into our own day. In addition to his excellence as an artist Bellini's name is noteworthy in our history, as from his time on, painting in oil takes its place as the characteristic medium of modern art in all of Europe.

The traits of the Venetian school were forecast in the work of Bellini, just as his Madonnas were the prefigurement of its characteristic type of female beauty. His follower Giorgione made rapid advances toward the modern style. Giorgione is the most lyrical of painters and was the first to cast aside the definite subject and to paint pictures in which his own mood or state of mind was the theme. "Look and enjoy," he seems to say, "don't bother about what it means." His people, nude or in the costume of the day, are stately and rather melancholy, his landscapes are verdant and romantic. (Pl. 104 : 2.) Something of the delicate flavor of the earlier painters remains in his pictures which otherwise seem so ripe and sanguine, giving them a charm which has never failed.

After Giorgione's early death Venetian painting burst into the ample, vigorous style of Titian, who of all modern artists was the most pagan in outlook. His early work is poetical and dreamy, with difficulty distinguished from that of his fellow student Giorgione, but these qualities soon gave way to a breadth and positivism that became typical of the whole school. Titian's splendid health and common sense are shown in all the branches of painting he undertook and

[1] Antonello owed not only his technical process to the Flemings but his minute and realistic point of view as well. His pictures, however, show a distinction and an aristocracy which is altogether Italian in spirit.

these are of every sort. He had no sympathy for asceticism. The Puritan has been sometimes shocked by the lustiness of his saints, but to the mythological subjects he gave a grandeur and a frankness that, we feel, would have been appreciated in the age of Pericles as would no other modern works. (Pl. 104 : 3.) The particularity of the Venetians was their rich color and of all of them Titian's color is the most splendid. He was also one of the supreme portrait painters.

Tintoretto, dramatic and unquiet, is a lonely figure in Venetian painting. He was deeply impressed by the style of Michelangelo, and used oil paint with the freedom and rapidity of fresco, depending but little on preliminary sketches, and trusting recklessly to the moment's inspiration and gesture. He had no noteworthy disciples in Venice; his greatest follower was a Greek, — El Greco, who later settled in Spain. Greco's highly imaginative, distorted style, very popular today, displays a passion and an unction which suited admirably the gloomy religiosity of the Spaniards.

The magnificent and sumptuous Paolo Veronese expresses far better than Tintoretto the character of Venice, his adopted city. His sensibilities, more external than those of the other great masters, responded to pomp and splendid ceremonies, and these were his real themes whatever the subject he was treating. A lovely silvery color, contrasting with the usual golden tone of the Venetians is one of his prominent qualities.

A family of artists, the Bassani, more important historically than otherwise, were working in Venice in the sixteenth century. They were the first who made a practice of painting genre pictures, — or pictures of daily life, without definite subjects, a logical development of the poetic innovations of Giorgione.

VI. COUNTER REFORMATION

The local Italian schools with the one exception of the Venetians, which kept some of its old characteristics, flick-

ered out in the general imitation of the great masters, Leonardo, Michelangelo, Raphael and Correggio. A new era was coming in. The inquisitiveness and self-sufficiency of the Renaissance, — its Pagan attitude, its pride and its passion for glory, after having displaced the faith and reverence of the fourteenth century, were in their turn found wanting. The national disasters, — the foreign invasions, the sack of Rome, the Protestant secession made evident the bankruptcy of the Renaissance philosophy. Men turned again to the old belief for guidance, but found it changed; its spirit had been altered by more than a century of attack. Thus it was that only the forms of the old faith were adhered to, and the bigoted and pretentious counter-reformations set in.

As though worn out by the colossal results which had just been accomplished Italian Painting entered on one of the most sterile periods of its history. The superficial qualities of the great masters were everywhere slavishly copied. The Mannerists, as these imitative artists were called, believed they had attained the perfection of art! — that having before them the works of their great predecessors, they had only to study these, with no need of consulting nature. The result, of course, was a false and empty idealism. The inevitable reaction took place with the realism of Caravaggio, a realism of commonplace things, which represented sacred or heroic characters in the aspects of any chance model. (Pl. 103 : 3.) Nevertheless the result was salutary and Caravaggio's sincerity and force have been among the most fruitful examples in modern painting, inspiring Velasquez and the Spanish painters of the seventeenth century as well as Rembrandt, and serving directly and indirectly as a starting point for the French realistic school of the nineteenth century.

At the same time as the Realists, the school of Bologna flourished. The Carracci, its leaders, were artists of wide culture and with Caravaggio were among the first to recognize the affectation and barrenness of the Mannerists. This school

is sometimes called the Eclectic as its artists chose what they thought fitting from the styles of various masters, combining in a single work, perhaps, the drawing of one, the color of another and the modelling of a third. They loved pomp, big gestures and a melodramatic expression, but withal they consulted nature and their skill was very noteworthy. (Pl. 104 : 4.) The school gained its place chiefly through the work of Annibale Carracci, whose frescoes in the Farnese Palace at Rome were for long regarded only inferior to the decorations of Raphael. The popularity of the Bolognese paintings continued without a break until about the middle of the nineteenth century when it was discovered that their ideal was cold and pedagogical and the school fell into one of those strange disfavors which history so often records. Their influence was momentous throughout all Europe in the seventeenth century and has continued down to our own time. The School of the Beaux-Arts in Paris continues today pretty exactly the plan of teaching of the Carracci in their academy at Bologna. (Pl. 105 : 1.)

VII. EUROPE OUTSIDE OF ITALY IN THE SEVENTEENTH CENTURY

The Italian styles transplanted to the other nations of Europe flourished vigorously. The intellectuality of the Bolognese suited perfectly the French genius and all of French painting of the time of Louis XIV derives from them. The greatest artist of France was Poussin, whose particular accomplishment was the fitting of figures of a classic mould into landscapes of a grandeur that the Bolognese never attained; he composed his landscapes with the same care and order that the other artists had given only to their figures. (Pl. 105 : 2.) His contemporary, Claude Lorraine, made landscape the overwhelmingly important motive of his pictures, the figures being small in size and secondary in interest. Claude expressed as no one else has done the serenity and

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1. A BACCHANTE, FLORENCE, Annibale Carracci
2. MOSES STRIKING THE ROCK, LONDON, Poussin

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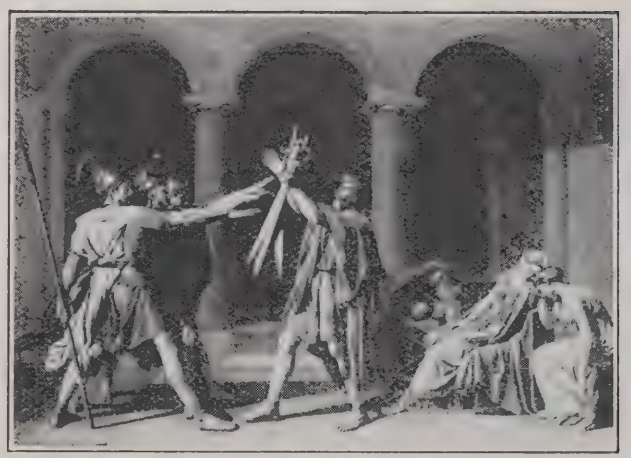

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1. CHRIST AT EMMAUS, LOUVRE, Rembrandt

2. OATH OF THE HORATII, LOUVRE, David

3. THE BARRICADE, LOUVRE, Delacroix

inspiration of extended views and has had many followers from his own time up to the middle of the nineteenth century.

The style of the greatest Flemish painter, Rubens, was also formed in Italy. For near a century before his time, all the fashionable painters of Flanders who seem to have looked upon their racial characteristics as uncouth and provincial, had been imitating more and more the Italian manner. The production of these Italianisers was comparatively negligible, but with Rubens Flemish painting reaches its highest point. His most famous quality was his magical color, at once rich and cool; this he learned from the works of Titian and Veronese, with whose sensuous point of view he had much in common. (Pl. 103 : 2.) His wonderful skill in composition he acquired from the Carracci. Rubens' distinctive expression is of exuberant health and joy of life, which pervade even his pictures of sacred subjects. No painter has produced as much as he and his influence has been most powerful.

Van Dyck, his pupil, carried the style of Rubens to England among other places and there, after more than a century of inanition it blossomed again in the portraits and landscapes of Gainsborough, Reynolds and the other English artists of the late eighteenth and early nineteenth centuries. Rubens' art was also the foundation of the eighteenth century French painting and of the Romantic school of the last century.

The foremost painter of Spain, Velasquez, began as a follower of Caravaggio but developed through the influence of Rubens and the study of the Venetian pictures at the Spanish court into one of the greatest portrait painters. (Pl. 103 : 4.) In the rendering of aërial perspective, his pictures anticipate an important preoccupation of nineteenth century art.

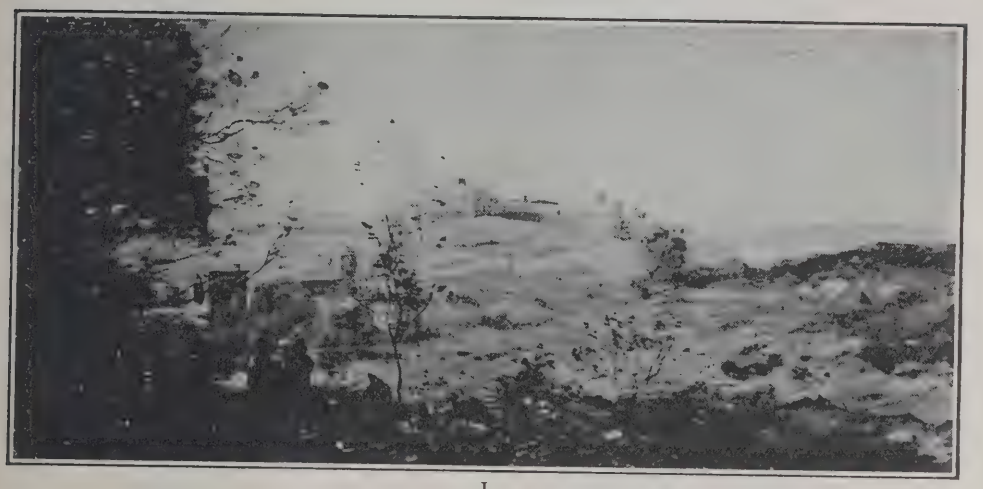
Velasquez, Rubens, and Poussin were contemporaneous, and at the same time Rembrandt was working in Holland. The conditions in that country differed from the rest of Europe. Holland was Protestant and a republic and conse-

quently lacked the usual patrons of the arts, — the court and the Catholic Church. The Dutch artist most frequently painted his picture, not on commission, but in the expectation that it would find a buyer, and as the houses were unpretentious, the picture had to be a small one. These conditions prevail to a certain extent today, but where we, with our cosmopolitanism, have the widest choice of aims and styles for inspiration, the Dutch had but one, — the representation of contemporary scenes in a realistic manner, a style like that of Pieter Bruegel in his late pictures, the development of the ancient northern tradition of realism. The work of all the Dutch artists with the one exception of Rembrandt, resembled one another. They painted the life about them and made no intellectual demand on the beholders. In landscape their accomplishment was remarkable and in the work of Ruysdael and Hobbema was destined to exercise a noteworthy influence on the development of nineteenth century landscape painting.

In the midst of these artists, excellent if prosaic and sometimes trivial, Rembrandt appeared. He is the painter of souls, — the greatest of Protestant artists. Like all those of Germanic stock he preferred character and expression to beautiful form. The Italian realists of the preceding generation count for much in his development; his pictures show strong contrasts of light and shade, according to the example of Caravaggio, but instead of the dense blacks of the latter, Rembrandt's shadows are the most aërial and transparent of all art. His handling of paint and color and his handling of line in his incomparable etchings are miracles of craftsmanship, but his Christ-like sympathy for humanity is perhaps his greatest merit. (Pl. 106 : 1.)

VIII. THE EIGHTEENTH CENTURY

After the great energy and ambition of the seventeenth century gaiety and frivolity were demanded by the eighteenth. Italy again was the pioneer of the new attitude;



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1. FORT ST. ÁNDRÉ, THE HAGUE, Corot
2. EMBARKMENT FOR CYTHERIA, LOUVRE, Watteau

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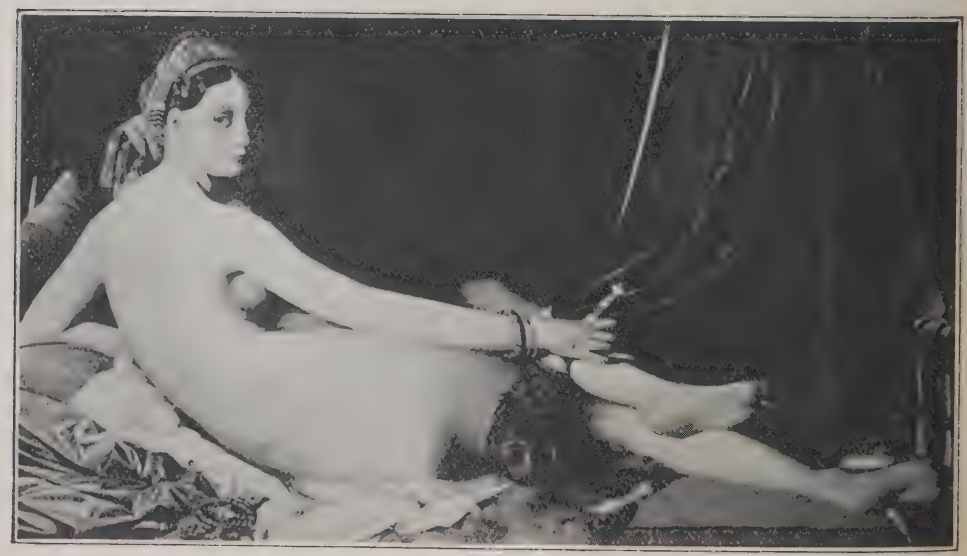

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1. L'ETOILE, PARIS, Degas
2. LA GRANDE ODALISQUE, LCUVRE, Ingres

Pietro da Cortona had already expressed the qualities of this latter epoch in the brilliant and joyous decorations which he and his followers painted in the Italian churches, — all those heavenly fêtes and angelic picnics which despite their bad taste to our minds, still command our admiration on account of their enormous skill. In Venice, the city of carnivals and pleasure, the perfect manifestation of this Italian gaiety is found in the eighteenth century in the work of Tiepolo, an artistic descendant of Paolo Veronese as well as Pietro da Cortona, and the last of the Venetian school. Tiepolo's influence has been of the widest. Goya the Spaniard was stimulated by him as well as by the realists of his own country of the century before, and proceeded from the painting of gay subjects to grim representations of bull fights and of the horrors of war. The last stage of the Venetian school produced a landscape art of truth and refinement, of which Canaletto and Guardi are the foremost exponents.

But the characteristic eighteenth century art blossomed best in France, — a dainty and charming art showing shepherdesses in silks and ribbons, pink dimpled goddesses, exquisite young men and dainty ladies, — all making love or doing nothing in cool, leafy parks. Watteau, the inaugurator of the style, founded his work on the pictures of Rubens; he alone of all these artists has a distinct personal note. His people are pensive in their enchanted gardens, they seem to be thinking of the flight of time and the transitory nature of things. (Pl. 107 : 2.) Boucher and Fragonard had no such ideas; with them all is gay and sensual and superficial.

IX. THE NINETEENTH CENTURY

There was an undercurrent of deep seriousness in the eighteenth century however, and a disgust with the frivolities of the fashionable life that became more and more strong, at last sweeping aside the French monarchy itself. After the exaggeration and flippancy of the time of Louis XV came the more restrained and reasonable art of the

reign of Louis XVI. It was then, in reaction to the licentiousness of the previous style, that pictures of a moral purpose were first painted, such as those by Greuze, in which only the good are happy. Greuze marks the transition between the aristocratic style and the new democratic development. The culture of the eighteenth century, having grown out of that of the Renaissance was classical in character and the new phase was the offspring of this Classicism. The interest in antiquity was largely augmented at about the middle of the century when the buried cities of Pompeii and Herculaneum began to be uncovered. A German critic, Winckelmann, pointed out the necessity of a return to the principles of antique art; another German, Raphael Mengs, was the earliest of the painters to apply these principles as they were then understood. The Classical revival was making itself felt in many parts of Europe simultaneously. At the time of the French Revolution the enthusiasm for antiquity was as intense as at the Renaissance; Plutarch and Cicero were again looked upon as infallible guides; the ideals and manners of the ancients were emulated by all the republicans. But the epoch lacked the youthful spirit of the Renaissance; mankind seems then to have passed out of the intuitive age into one of reason and criticism.

David, a Frenchman, the official painter of the Revolution and later of the Empire,[1] was the leader of the Classical revival in art. His upright and uncompromising pictures, designed like sculpture in low relief and colored in flat tints — of which the Oath of the Horatii, his first great success in 1784 is a typical example (Pl. 106 : 2) — are manifestations of the same force that overthrew the Monarchy. As court painter to the Empire, he recorded its ceremonies with careful adherence to the facts of likeness, costume and setting and his portraits were always startlingly realistic. His realism in fact proved to be the starting point of the insurgents

[1] The Empire style was only that of the Revolution which was adopted and approved by Napoleon.

of the next generation; from David indeed the perplexed and rapidly shifting movements of nineteenth century painting can all be traced, at least as regards their main aspects. A characteristic of the age was its restlessness; never was an epoch which showed such varied and seemingly conflicting aims.

Nevertheless all the styles of the early part of the century tended towards the development of realism which was the main expression of the age. Ingres, the greatest of the pupils of David, painted with the exact outlines and cold, rather flat color of his master, but whereas Greco-Roman statuary was David's inspiration, the style of his follower was founded on Raphael. (Pl. 108 : 2.) Although Ingres was not interested in the effects of nature, he was a realist in a profounder sense and expressed form and character with the rarest subtlety and precision.

The art world of the generation after David was divided into two antagonistic camps — the Classicists, of whom Ingres was the leader, and the Romanticists headed by Delacroix.[1] (Pl. 106 : 3.) Romanticism was the reaction against the coldness, severity and the frequent pedantry of the Classicist. The Romantic artist stood for freedom and celebrated his personal emotions relying on color and effect; he drew his inspiration from any art except that of the Greeks and Romans, but chiefly from Rubens, the great Venetian colorists and the contemporary landscape painters of England who were at this time, as a matter of fact, more precocious than the French as regarded the modern development.

The pictures done in England before the eighteenth century were the work of visiting foreign artists, like Holbein in the reign of Henry VIII and Van Dyck in the time of Charles I. The English style, founded on the art of the Low Countries, took its rise with William Hogarth whose point of view somewhat corresponds to, but antedates that of Greuze.

[1] The names of the groups were of course only accidental. Their differences seem today not to have been so enormous as they imagined. It has been said that broadly speaking, "Classicism was method and Romanticism energy."

The popular portrait painters of the next generation, Reynolds, Gainsborough and the others quickly attained a remarkable degree of skill but were "occupied less with truth than with grace." [1] Constable who discovered the open-air treatment of landscape — the flickering effect of light out of doors, was the great pioneer of modern realistic painting (Pl. 109 : 3) ; Ruysdael and Hobbema were his models but his less pretentious pictures and his sketches show him to have been the first to paint nature without theories and preconceived notions. Of the same age as Constable was Turner, the most romantic of landscape painters. His characteristic pictures are all color and effect and wild fancy.

It was these two Englishmen who, very appreciably, affected the development of the Romantic movement in France. Romanticism was many-sided — imaginative, realistic, mystical — but it must be summed up in this rapid account by the work of its most prominent advocate, Delacroix; he drew his subjects from the most varied sources — literature, history, legend, even topical events. (Pl. 106 : 3.) All his work was imbued with his ardent enthusiasm and his intellectual energy. A great critic of the time, Théophile Gautier speaks of the enormous effect his pictures made when they were first seen, with their feverish and convulsive drawing, their fury of brush handling; how they excited the indignation of the Classicists, and enthused the young painters by their boldness and novelty of which nothing had ever given a presentiment.

No sooner had the Romanticists won their fight for official recognition, than a reaction against them set in among the progressive younger painters, just as they had reacted against the Classicists. Reality was entering more and more into pictures. The great caricaturist, Daumier, was producing his daily cartoons of topical affairs and everyday life; Millet was beginning to paint his Romantic pictures of peasant life; Corot and the Barbizon painters were relying on

[1] The American painter, Gilbert Stuart, belonged to this group.

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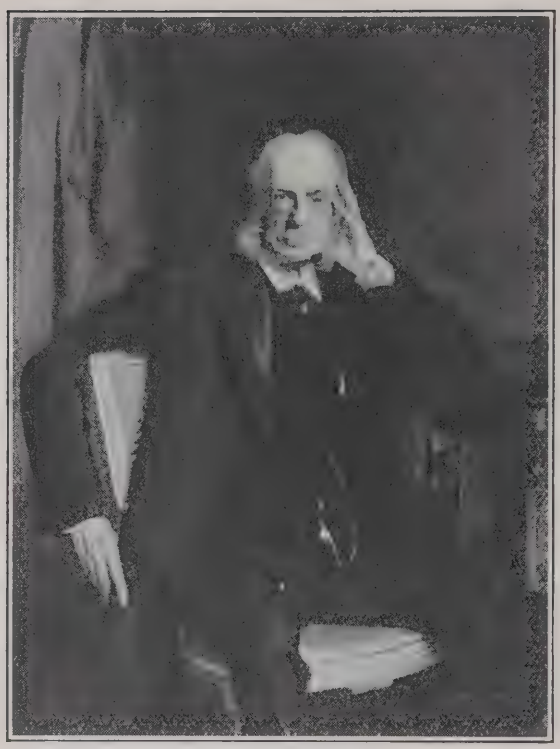
1. NORTHEASTER, METROPOLITAN MUSEUM OF ART, Winslow Homer
2. STONE BREAKERS, DRESDEN, Courbet
3. DEDHAM VALE, LONDON, Constable
4 THE SHEPHERD'S SONG, METROPOLITAN MUSEUM OF ART, Pierre Puvis de Chavannes



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1. HENRY G. MARQUAND, METROPOLITAN MUSEUM OF ART, John S. Sargent
2. THE THINKER, METROPOLITAN MUSEUM OF ART, Thomas Eakins
3. THE CARD PLAYERS, COLLECTION BERNHEIM–JEUNE, PARIS, Cézanne

reality in all they did. Realism was inevitable, and its creed was pronounced by Courbet at about 1850. "Nothing at all should be invented, only things actually seen should be pictured." (Pl. 109 : 2.) Courbet, more than anyother influenced the evolution of painting in the last half of the century. Manet carried on his principles adding a more true effect of color and light and an even further freedom of subject matter. The culmination of the movement took place in the work of the Impressionists, among whom Claude Monet is the most famous. With them the summit of the rendering of the natural effect of light and air was reached. This achievement of the Impressionists was the one novelty in the painting of the time.

The weakness of the Realistic school was its disregard of composition and its neglect of the imaginative. The greatest artists of the century had been subject to the realistic impulse but had escaped the faults of the later extremists of the movement by a reliance on the ancient standards. Three of these great artists, Ingres, Corot (Pl. 107 : 1) and Degas (Pl. 108 : 1) are already ranged with the masters of Realism of the past. Even those who can be classed as Idealists were true to the aspects of natural effect — like Delacroix, or Puvis de Chavannes who gave reality to his dreams of a Golden Age (Pl. 109 : 4), or Renoir, who, out of familiar realistic elements created a sensuous art akin to that of the eighteenth century but without its artificiality.

France was the leader of the art of the time, as she was before in the Gothic epoch, and as Italy was in the Renaissance. Transformations similar to those of French art took place in the other countries. These countries also produced excellent artists, but the French development was more cohesive; outside of France the efforts of one generation had but little effect on the next, which was apt to seek its inspiration from its contemporary Frenchmen. The German equivalent of the School of Ingres was the work of the so-called Nazarenes, who attempted to revive the style of the

Italian fifteenth century. Germany also produced painters who correspond to a certain degree with the French Romanticists and Realists. England was more independent; her art since the time of Hogarth has had a certain literary quality which appears as a national characteristic. The great school of English portraitists declined after the death of Lawrence, and Constable and Turner had no followers in their own country. The wide spread archaistic tendency of the century — the attempts to resuscitate earlier styles, was manifested in England in the Pre-Raphaelite Brotherhood. Like the Nazarenes in Germany, these painters, as their name implies, founded their principles on the Italians of the fifteenth century. Their ideals were intellectual and literary and at the same time naturalistic. Though they infused a new enthusiasm into English painting, the vitality of the movement scarcely lasted for two generations.

Painting in Colonial America was of a similar sort to the English provincial painting of the time. The best pre-revolutionary artist was Copley who developed a personal style, drier and more austere than that of its English prototype, which has raciness and charm. Stuart was of the group of the accomplished English portraitists. When an independent, self-reliant spirit made itself felt, after the Revolution, there appeared the so-called Hudson River School of Landscapists and the portrait painters of similar ideals. These artists were enthusiastic about American scenery and types, and it is they who come nearer to a distinct national school than any other group in our history. The movement was not strong enough to withstand the competition of European art when contact with foreign countries became usual, and after the third quarter of the century American painting verged rapidly towards the cosmopolitanism which now prevails. This transformation was hastened by the success of John Sargent (Pl. 110: 1), an American who is equally at home in London, New York or Paris. Whistler, who also has a world-wide reputation, except for the accident of birth belongs in es-

sentials to the French school. Our strongest native painters, men like Homer (Pl. 109: 1), Inness or Eakins (Pl. 110: 2), were those who guarding something of the raciness of the Hudson River group, yet had the benefit of foreign training. These men were able to produce pictures which were American in point of view and at the same time of technical excellence comparable to European work. After their disappearance America seems to have quite joined the European current, where indeed national traits now count for less than ever before.

X. THE TWENTIETH CENTURY

The present day style is the reaction to the formlessness of much Impressionist work and their superficiality in imitating only the outward appearance of nature. Perhaps also it is a reaction from the smugness and pretentiousness of a new sort of picture which the enormous art exhibitions of recent times have called forth. The "Salon picture," as it has come to be called, is painted solely with the idea of attracting attention in the exhibitions. It is frequently sensational, or mawkishly sentimental and above all showy. Its artist always pretends to skillful craftsmanship. In contrast to this sort of work paintings of simplest motive and roughest handling are held in high regard. The work of Cézanne, a painter of touching sincerity and great simplicity, has come into prominence since the beginning of the century. (Pl. 110: 3.) The new style aims to arrive at something like an abstract of realism in which the subject is represented in an essential aspect, which may be free from the accidental circumstances of any particular appearance. A direct and unelaborated handling, like the handling in the drawing of an untaught child, is now fashionable.

Our age is tired of robust and accustomed forms and craves a new expression in their distortion; the fact is seen in painting, sculpture, literature, music,— in all our activities. The cause of this phase — the nature of the necessities of the time

which it responds to — may be uncertain to us now that we are in the midst of the transformation, but it will be clear enough to our successors. No matter how capricious it may appear, art, like language, is a living growing thing and is at every stage just as it has to be. "O marvellous necessity," said Leonardo da Vinci, "O stupendous necessity, by thy laws dost thou compel every effect to be the direct result of its cause and by the shortest path. These indeed be miracles."

BIBLIOGRAPHY

Berenson, B., *The Central Italian Painters of the Renaissance*. New York, 1909.

Berenson, B., *The Florentine Painters of the Renaissance*. New York, 1909.

Berenson, B., *The North Italian Painters of the Renaissance*. New York, 1907.

Berenson, B. *The Venetian Painters of the Renaissance*. New York, 1897.

Burckhardt, *The Cicerone*. New York, 1908.

Burckhardt, *The Civilization of the Renaissance in Italy*. London, 1909.

Conway, Sir M. W., *The Van Eycks and Their Followers*. London, 1921.

Dilke, Lady, *French Painters of the Eighteenth Century*. London, 1899.

Fromentin, E., *Masters of Past Time*. London, 1913.

Gillet, L., *La Peinture, XVII et XVIII Siècles*. Paris, 1913.

Isham, Samuel, *American Painting*. New York, 1905.

MacColl, D. S., *Nineteenth Century Art*. Glasgow, 1902.

Mâle, E., *L'Art Religieux de la Fin du Moyen-Age*. Paris, 1909.

Mâle, E., *Religious Art in France XIII Century*. London, 1913.

Meier-Graefe, *Modern Art*. London, 1908.

LANDSCAPE DESIGN

BY

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CHAPTER VII

LANDSCAPE DESIGN

I. MAN AND THE LANDSCAPE

Most of the earth is beyond the walls of buildings, and is untouched in appearance by the art of the sculptor or the painter.

Yet the beauty of this outdoor world has an importance to man of the same sort as the beauty upon which his highest effort has been lavished in the arts of architecture and painting and sculpture. No one but a prisoner in a windowless house can escape being influenced by the beauty or ugliness of his outdoor surroundings.

The appearance of the land and objects upon it, the effect upon the eye of their infinitely various and changing forms and colors and relationships, seen in connection with the sky and all that it contains, is what we call landscape. The meaning of the word is well brought out in Hamerton's phrase, that land belongs to its owners but the landscape belongs to him who beholds it. In this broad sense, the "landscape" of the world includes every sort of outdoor scene, — in mid-ocean, in the heart of the city, or in the depths of the country.

Whether we know it or not, whether we wish it or not, the landscape of the world, amidst which we live and move and work and play, continually affects the state of our nerves and our state of mind — in short, affects our happiness — by its beauty or its ugliness, by its infinite varieties of character.

1. Man's Influence over Landscape

But the degree of good that one gets from the ever present landscape depends on two things. First, the keenness of one's perception of the beautiful qualities in landscape, a thing which can be readily developed by practice in observation

and comparison. Second, the physical qualities of the landscape itself, qualities which depend largely upon the doings of man, as woodsman, farmer, gardener, builder, or in some fashion controller of the materials and forces of nature. For the appearance of the land and the objects upon it generally results from the control which man himself exerts over the materials and forces of nature just as truly and as completely as the sculptor controls the appearance of the natural stone which he shapes.

There is not one of us who is not responsible in some degree for making or marring the landscape of our world, from the heedless one who befouls it with papers thrown to the winds or who drops a glowing match that sweeps the woodland with fire, to the engineer who remodels a whole country-side in pursuit of some deliberate economic aim, or the patient artist who devotes himself for years to perfecting the beauty of a single bit of ground.

Whenever this human control over the land and the objects upon it is influenced by desire to make the resulting landscape more enjoyable than it would otherwise be, an element of artistry enters, which often attains the quality of a Fine Art.

This art is most often called landscape architecture when practiced professionally. But it has gone by many other names, and as an element in other occupations it is a very ancient and wide-spread art; a very modest and unpretentious art for the most part, as when the plowman takes a simple pride in his clean and perfect furrows. The texture of a field well plowed in spring is as beautiful as any fabric from the loom; more subtly beautiful than the plowman often quite appreciates, but with a beauty that would not have been attained but for his pride in a job that not only *is* but *looks* well done.

The beauty of the landscape in which the plowman's furrows form a part depends on many things besides the texture of his field and the rich coloring of the local soil in perfect tilth; such things as the shape and the size of the field in rela-

tion to the modelling of its surface, sloping this way or that, rounding upward or hollowing downward or flat in various parts; such as the position and form and color of objects and masses rising from the earth or spread upon its surface within or about the field — trees, bushes, fences, buildings, and their shadows, adjoining surfaces of smooth greensward or richly stippled many-colored berry patch, the corner of a door-yard garden with bright color of flowers coming into bloom, the still more striking note of water in a pond reflecting the bright light of a colored western sky that forms the upper half of the picture.

These and other elements seen in combination make this particular landscape exactly what it is. And except in the untouched wilderness the elements of any landscape are just what they happen to be only because on that part of the earth men have acted just as they have. The motive of their actions and their neglects may have been mainly economic, the pursuit of three meals a day and shelter and clothing; but often there has been present, consciously or unconsciously, some degree of regard for appearance, as with the plowman.

Conscious effort for pleasant qualities in landscape is often narrow and petty, disregarding the larger beauty of the landscape for some minor quality. Thus one may paint a house with a color that is pleasant enough in itself, but discordant with its surroundings. Or one may choose a line for a hedge, because of some general prepossession for straight hedges (or just as likely for avoiding straight hedges) in such a way that the hedge appears to cut in two an open space that is marked as a single pleasant unit by every other element of the landscape — by the form of the ground, by the direction of outlook from a house, by surrounding trees or buildings or roads, by everything in sight — and thus may impair and fritter away in pursuit of a detail, or in following some arbitrary "rule," the finest quality in a landscape formed in advance by nature and by circumstances not of one's own contriving. For in a landscape as in any work of art, unity of effect is

fundamental. The quality of the whole depends upon its different parts appearing to belong together, each helping out the effect of the others.

2. Appreciation of Landscape Beauty

Rules, recipes, and arbitrary preconceptions, like that landscape slogan, reflecting a half-truth, "Avoid straight lines," are the resort of the lazy and the superficial in matters of landscape as in all branches of art. They are always dangerous because they offer an escape from thinking things out for oneself, from deciding in one case after another for one's own self where lies the greater beauty and why. It is only by making such choices again and again with complete honesty to oneself, hiding behind the skirts of no "authority," that one gains in keenness of perception, surety of judgment, and real enjoyment.

The marvelous thing is that we are so made that each of us, as he grows in the enjoyment of beauty, generally finds that the qualities which most appeal to him are among those which have appealed to others highly developed in the appreciation of beauty, even in times or places far remote and circumstances very different. It is with the learning of this truth that one comes to an appreciation of the true value and use of "authorities" and "precedents." Their use is not to relieve us of standing on our own feet in matters of artistic choice, but to make us modestly critical of the thoroughness of our own understanding and the keenness of our own perceptions where we find them apparently at odds with the judgment of acknowledged experts.

What follows, then, will be of value mainly so far as it helps the readers a little in seeing and appreciating landscape beauty for themselves in their own way, in thinking about it themselves, and in making intelligently such decisions as they have to make that will affect the beauty of the landscape amidst which they and others are compelled to live their lives.

II. LANDSCAPE DESIGN AS A FINE ART

Landscape design may be regarded as the art of choosing wisely between any practical alternatives which present themselves to us in dealing with land and the objects upon it, with a view to securing greater enjoyment from the appearance of our outdoor surroundings. It is applicable not alone where the purpose is primarily to give enjoyment, as in the flower garden, the lawn, or the park: but also where the primary purpose is utility, as in the vegetable garden, the farm and the industrial plant, and in the placing in designed relation to their surroundings of buildings, roads, streets, railroads, and the countless elements which make up our outdoor environment in city, village, and country.

It merges into many branches of engineering and the economic arts in the sense that it deals with the same subjects; dealing with them, however, from the standpoint of outdoor beauty; just as architecture merges into engineering though holding fast to the standpoint of beauty in building. As a fine art landscape architecture merges into architecture; but is centered primarily on a different class of mechanical and artistic problems from those of architecture; dealing with unroofed spaces, often of great horizontal extent in proportion to the vertical dimensions; and dealing far more than architecture with elements which change through the years, like growing vegetation, always in accordance with orderly laws, but laws too complex to permit of mechanically exact prediction.

1. Qualities Peculiar to Landscape Compositions

In most of the fine arts the act of creative designing means the putting together or shaping of raw materials into a new *kind* of unity; as a painter assembles pigments and canvas into a picture, where no picture was before; as an architect creates a building where no building was before by assembling diverse materials which have not previously entered into the

composition of a building. By contrast, the creations of landscape architecture — namely landscapes — are made by altering, adapting, or perfecting real landscapes existing in advance as such, much as an architect alters an old building to adapt it to new uses while respectfully conserving its fine qualities. The changes may be more or less radical, the new expression may be strikingly different from the old; but always the starting point is not merely a lot of separate raw materials for a landscape but an actual landscape of some sort, whether it possesses much or little of artistic quality worthy of preservation and development in the new landscape. The form of the ground may by its outline or by its vertical modelling, or both, suggest to the trained eye shapes which need only to be perfected and to be emphasized by the addition of suitable details or the elimination of unsuitable details, to become the chief elements of a very beautiful new landscape. The same may be true of any other element or elements of the original landscape, such as a portion of the existing local vegetation, or the gleam of water in a lake a mile away or a mountain on the distant sky line.

Even more often is it true that elements of the preëxisting landscape which are beyond the practical control of the designer impose limitations upon the kinds of landscape which he can successfully produce by his changes; and a bumptious disregard of these limitations is responsible for many a wasteful failure. Always the surroundings, the underlying geological skeleton, the sky, and the climate remain — beyond control. And it is usually a reckless waster of landscape values who does not, with respectful modesty, save, cherish, and weave into the altered landscape with strengthened or altered emphasis, the characteristic qualities of these and other preëxisting elements.

Alike for one who seeks only to increase his enjoyment of landscape as it is, and for one who essays to alter landscapes, the first and most important lesson is this one of alertly sensitive, respectful, clear-sighted appreciation of existing land-

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1. AN ENGLISH DEER PARK, IN THE LANDSCAPE STYLE. CHATWORTH. Photo by Thomas W. Sears
2. AN ITALIAN RENAISSANCE VILLA. THE LOWER GARDEN, VILLA LANTE, BAGNAIA

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1. AN ITALIAN RENAISSANCE VILLA. THE STEPS BELOW THE CYPRESS POOL, VILLA FALCONIERI. Photo by H. V. Hubbard
2. A MOORISH GARDEN IN SPAIN. THE GENERALIFFE, AT GRANADA

scape qualities for which he can take no credit to himself. It calls for a much more self-subordinate attitude of mind than that of other artists, who aim at qualities to be produced by them with raw materials which they may choose from anywhere to fit their preconceived aim.

Closely akin to this is another fundamental fact of landscape art; that every landscape has parts which are also parts of other landscapes. For the landscape of the world is continuous, its elements regrouping into new unities as the beholder moves from place to place; so that each particular landscape must be considered in relation to its actual surroundings, like a mural painting as distinguished from an easel picture; and also not merely as seen from a single point of view, however dominantly important, but as seen by living people who move about and see as they go.

2. Importance of Utilizing Qualities Making for Unity

It follows that a real landscape generally lacks certain mechanical aids which strengthen the quality of unity in many works of art. It cannot be handled or moved about as a unit, physically distinct from everything else. The parts of its enclosing frame or border (be they foliage or architecture or hills or whatever) may belong even more intimately to other landscapes than to itself. Therefore, since without unity there is no beauty but only distraction, it becomes peculiarly important to note other inherent qualities making for unity in landscapes.

One of these is unity of geological form. A valley, recognizably carved by the action of water out of a once greater land-mass, has a conspicuous unity of form. Any one can recognize that it has an upper end from which it slopes downward towards its outlet; that it has a right side and a left side, both descending toward the stream-thread. A piece of a valley, recognized as such, suggests at once the other parts which go to make up the whole valley. And if a piece of land obviously extends beyond the limits of one

valley into another, the mind tends to disunite its two parts and associate each part with the valley in which it falls. And so with every distinctive physiographic form that has visible unity of structure or origin, such as different types of valleys and valley parts, of enclosed basins, of plains and of self-detaching eminences. They offer a fascinating study in connection with the æsthetic qualities of landscape, but space does not permit even an enumeration.

It is to be noted, however, that valleys and other physiographic units of concave form present their several parts most readily and completely to the vision and most often exclude vision of what lies beyond their margins, and thus have a more obvious unity than any except the most conspicuously detached of eminences or most sharply defined of plains. Even when of vast dimensions and surrounding the beholder on every side, these concave land forms tend to "compose" into unity after the manner of a completely enclosed and self-contained "interior" in architecture, as is also the case with other spaces or "voids" more or less surrounded by masses, such as open spaces in the midst of trees or bushes, or even mere depressions in any mass of materials, provided only the eye can look into them. On the other hand a convex or upstanding mass surrounded by voids and unassociated with any appreciable outer enclosing frame of other masses, is difficult or impossible to appreciate and enjoy as a unit unless it falls within a narrow angle of vision, as is the case with a piece of sculpture or an architectural "exterior" or an isolated mountain, when seen from a sufficient distance; or indeed with a mass so enormous as the moon seen at a correspondingly vast distance and surrounded by a void proportionately great. To one too near its surface neither moon nor mountain could any more be appreciated as a visual unit than can the globe of the earth; but a valley vaster than any mountain can be thus seen by a child with its head barely above the grass. It is for this reason that the dominant compositions, or principal units, in real landscapes

are almost always "interior" compositions, the interest centering within a concavity of some kind, constrained thereto by surrounding higher masses.

Unity of natural character of another sort may be derived from vegetation. A given condition of soil, climate, and other controlling factors often gives rise to kinds of vegetation which produce, when growing together, a unified and harmonious effect in the landscape irrespective of the ground forms; a unity which is destroyed or weakened by the introduction of vegetation of a markedly different type. This is partly a matter of accidental personal association. A Californian long accustomed to seeing the important eucalyptus growing in association with the live oak might, from very habit, feel in that combination a certain kind of unity which would not exist for the man from South Carolina. But there are many natural combinations of foliage which have a strong and beautiful unity of character instantly felt by a sensitive eye that has never seen them before. This is especially true of the simple foliage texture of temperate, northern, and alpine climates, like the wide-stretched almost monotonous pine woods, or like the gray-green miles of sage brush of arid regions; and is less often the case in the moist tropics, where leaves of all sizes and shapes are often mixed in confusion, beautiful in detail but lacking in impressive unity of broad effect except where seen from a great distance.

Another set of qualities, making for unity, or the lack of it, in landscapes as in all works of art, must be mentioned here even though it cannot be adequately discussed. Unity in the quality of emotional impressions made by any landscape upon the beholder is of fundamental importance. Different kinds of emotional impression are vaguely suggested by such adjectives as "peaceful," "gay," "solemn," "domestic," and "wild," but the differences are so subtle and infinite in variety as to make any list of such qualities ridiculous by its artificiality and incompleteness. But no matter how elusive, such differences are very real. They can be felt even where

they cannot be expressed in words. Sensitiveness to them increases one's enjoyment of fine landscape and lack of sensitiveness leads to much waste of opportunity in actually dealing with landscapes. One of the peculiar difficulties of dealing with the emotional impressions of landscapes is that they depend only in part on inherent qualities of the landscapes and on universal human traits, turning quite as often on the associations which an individual or a group of individuals may happen to have attached to certain landscape qualities and elements. The Kansas farmer has a different set of associations from the Virginia country doctor, and such differences must be reckoned with in landscape architecture no less than his audience must be reckoned with by a playwright.

Closely connected with the emotional impressions of landscape is the matter of "styles" in landscape architecture. Even here classification must be somewhat arbitrary and is apt to be misleading, but it must be attempted.

Broadly speaking there are two contrasting modes of expression in landscape architecture which may be called "humanized" and "naturalistic."

3. Humanized Mode in Landscape Design

The older, simpler, and more direct mode, the "humanized" mode, frankly appeals, as do most works of art, to the deep-rooted human pleasure in exhibitions of the skill and power of man, and in evidences of man's control over nature. Its primitive exemplar was the conspicuously safe and orderly garden, hard-won from the hostile and dreaded wilderness of the world at large, separated from that wilderness by a girdle of defence which gave the name of "garden," and contrasting in appearance with the apparent disorder of that untamed wilderness as much as the skill and resources of the gardener could make it. Practical convenience and these artistic motives alike called for straight rows, rectangular forms, and other simple, obviously man-made,

geometric forms and relationships; the more beautiful in their proportions and composition and in the distribution of color and light and shade the better, provided this beauty was of an obvious and man-made sort, deliberately avoiding, except in details like flowers and leaves, those complex and subtle exhibitions of the working of natural forces which we sophisticated moderns have come to believe profoundly orderly even where we do not understand them, and which we can recognize as beautiful because we are no longer dominated by fear of the powers they represent.

Landscapes characterized by the more obvious and simple geometrical forms and relationships — squares, rectangles, circles, and circular arcs, arranged in perfect symmetry on the two sides of a well-marked axis — are often called "formal" in design. Such a "formal" framework of design is the simplest and safest basis for frankly humanized landscapes today as always, but there can be a gradual transition into arrangements the form, or formality, and orderliness of which are more complex and subtle and less obvious but no less beautiful and no less frankly and conspicuously the work of man. Some of the highly artificial and conventionalized "landscape" gardens of the Japanese and Chinese are striking examples of this type; not "formal" in the sense in which we speak of formal gardens, yet conspicuously and proudly proclaiming their human craftsmanship.

4. Naturalistic Mode in Landscape Design

By contrast the aim of the "naturalistic" mode in landscape design is to obscure or at least to subordinate all evidence of human craftsmanship and control over the landscape while securing a high degree of beauty through unity and the subtle kinds of order found in natural landscapes.

To get real pleasure from looking at the wilder natural landscapes such as mountains, deserts, and stormy seas, those landscapes most expressive of the absence of human control, is a relatively modern development if we can judge

by the evidence of literature and painting. It is man's increasing domination over the world about him, which has created the desire and need for seeking this enjoyment of "natural" scenery as a relief from the too insistently man-made surroundings of civilized life. And deliberate control of landscape in a naturalistic mode, in artistic pursuit of these newly appreciated qualities in certain landscapes, is even more modern. It first began to be much practiced and studied in England in the eighteenth century, partly as a response to this deep-seated human need marking a new era, and partly as a mere passing reaction against an overworked fashion of the previous century for widely extended and exaggerated formality in landscape design. Many stupidities and blunders and affectations have been committed in the name of this naturalistic mode. These have been failures mainly in that they did *not* make the element of human control inconspicuous but focussed attention on it by transparent theatrical disguises. They have been due to lack of skill in a very subtle and delicate art, or to attempting this mode of landscape treatment in cases where no possible skill could have attained success and where a frankly "humanized" treatment would have been the only road to successful landscape beauty. Still more often a confused and hesitating purpose has led to hopeless compromises between the humanized and naturalistic modes.

But where it is possible and appropriate the naturalistic has a place of growing importance, side by side with the humanized mode, in a civilization whose people are so submerged among insistently man-handled surroundings as to become weary of all humanized landscapes, beautiful and ugly alike.

A simple example of the naturalistic is found in the treatment of a trail through a mountain wilderness, where the mere removal of obstructing vegetation may open beautiful landscapes, wholly "natural" except for these removals. A more elaborate example is a park created on a bare flat field

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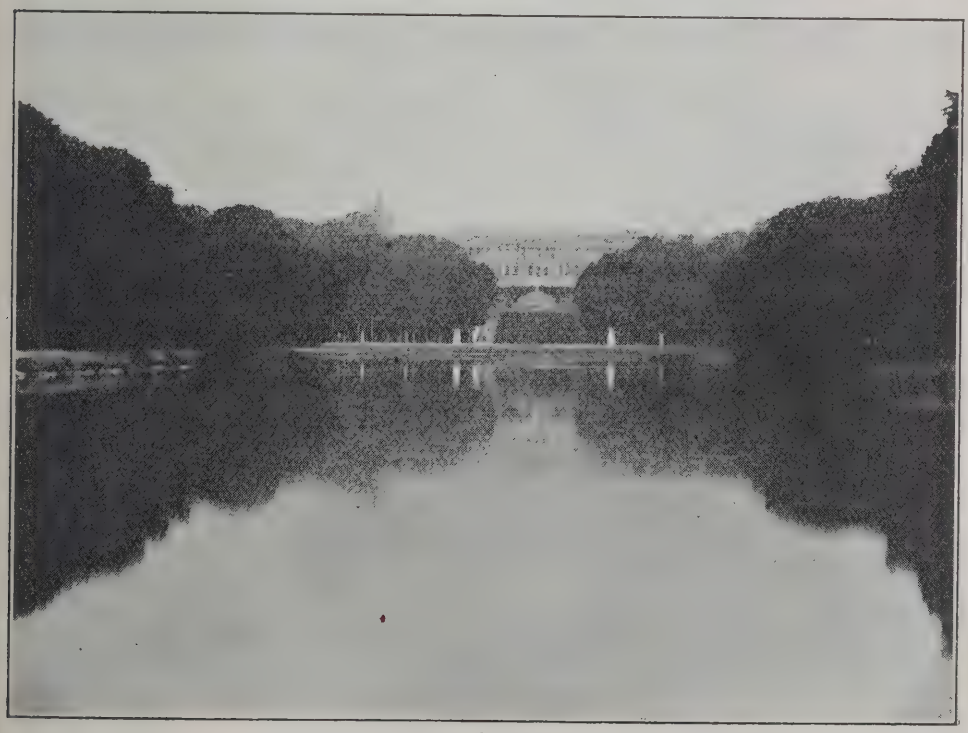

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1. THE LANDSCAPE STYLE IN AMERICA. THE LONG MEADOW, PROSPECT PARK, BROOKLYN, N. Y.

2 THE GRAND STYLE IN FRANCE. CHÂTEAU OF VERSAILLES, FROM THE FARTHER END OF THE "GRAND CANAL." Photo by H. V. Hubbard

A JAPANESE GARDEN. THE TEMPLE OF SAMBO-IN AT DAIGO, NEAR KIOTO. Courtesy of the Macmillan Co. Photo by Guy H Lee

A NEW ENGLAND COLONIAL GARDEN. THE CREAMER GARDEN, SALEM, MASSACHUSETTS. Photo by Frank Cousins, Salem

by such shaping of the surface and such planting and other operations as will produce a landscape having essentially the same qualities as a natural landscape of a more interesting and beautiful type than that of the original field.

In landscapes more or less dominated by buildings, especially if the land areas are small, as they are about most public buildings and about so many dwellings, the naturalistic mode tends to be more and more difficult and less and less appropriate compared with the opposite mode.

But it must be borne in mind that this fundamental distinction between the humanized and naturalistic modes is not a distinction of a physical kind, as between blue and yellow. Few naturalistic landscapes are without recognizably humanized elements. The distinction is one of consistent and deliberate *emphasis* upon one set of qualities or upon another, and can be successful in either direction only if circumstances permit those qualities chosen for emphasis really to dominate the character of the landscape as a whole. Here as elsewhere compromise is fatal.

The place more than all others where it is essential to have consistent adherence to the naturalistic mode at almost any sacrifice of admirable qualities incompatible therewith, is in the larger public parks and scenic reservations set apart primarily for the recreation of people nerve-weary from the routine of intensive man-made civilization. The term "parks" is applied to places of outdoor recreation of many kinds, for some of which the most elaborately "formal" of humanized landscape treatments are admirably adapted. But among the many kinds of parks there is great and growing need of those consistently naturalistic landscapes which alone can supply the sort of refreshment toward which the modern urbanized man is learning more and more to turn. The larger a park is and the more perfectly it can supply the qualities of natural landscape the more essential it becomes to protect it against the injection of avoidable "humanized" elements.

5. Historic Styles in Landscape Design

Beyond the broad distinction above drawn between the humanized and naturalistic modes, there is space but for the briefest reference[1] to a few specific historic styles in landscape design.

The Moorish gardens in Spain had for their direct prototype the gardens of Persia and Syria. They were most often patios surrounded by buildings, shady, cool, full of the scent of flowers and the splash and sparkle of running water. The gardens were necessarily a part of the architectural scheme, both being in a clearly marked style which moulded the culture of Spain, and through the Spaniards influenced the style of the buildings and gardens of Mexico and California in a manner peculiarly suggestive for the great arid, but irrigable, regions of the southwestern United States climatically so much like Spain and Persia.

The villas of the proud, powerful, ostentatious, artistic nobles of the Italian Renaissance were based on the design of the gardens of the old Roman patricians and served a mode of life not very different. They were usually the unified work of one designer, often a well-known architect or sculptor, and the style of the garden designs reflects the rise and development of the style of the Renaissance in the other arts. The villas were set on steep-sided hills facing the open view and the cool breeze. In earlier times the design was simple, — the main building and its terrace being the center of a scheme of gardens with still pools, and statues and fountains, often of great sculptural excellence. In later times the villas became more conscious architectural schemes of axial relation, with decoration less for intrinsic merit than for general effect. Throughout the three centuries of their development there was shown in the villas a feeling for the beauty of water, displayed in increasingly ingenious ways; for the refreshing deep shade of foliage and its contrast in design

[1] The following four paragraphs are mainly drawn from the article on "Landscape Architecture" in the *Encyclopedia Americana*, latest edition.

with open sunlit spaces, qualities peculiarly precious in the Italian climate and landscape but precious in every climate of bright sunlight; a feeling for the inspiration of the open distant view; and a feeling, never as yet elsewhere equalled, for effective formal design in materials of architecture and vegetation.

In France, England, and Holland the Renaissance called forth an expression of architectural design in outdoor areas, stimulated by Italian influence, which flowered in different periods. The Dutch had their small, trim, topiary gardens, the English their Tudor and Elizabethan country estates with pleasant flower gardens, stretches of turf, and homely kitchen gardens, enclosed one next to the other; and the French had their great open parterres and large gardens, consisting of different treatments of rectangular units more or less intervisible, — precursors of the art of Le Nôtre.

Le Nôtre's work at Versailles expressed the power of France and the magnificence of Louis XIV. Built on relatively flat land, and extending for miles, the palace grounds produced the effect of great extent with recognizable unity and variety of open and wooded areas by the use of *allées*, — straight tree-lined avenues, here for the first time employed at so great a scale, — separating the bosquets or groves of formal outline, connecting various points of interest, forming vistas large and small centered upon the architectural and sculptural decoration of the scheme. Next to the garden façade of the main buildings, a great terrace decorated with water basins or carpet-bedding served as a foreground to the architectural design.

This formal design in the "grand manner," which extended its influence all over Europe, even into Russia, and was often carried to extremes by incompetent designers, invited, as we have seen, a reaction towards the naturalistic mode. The landscape style, originating in England where it was expressed in the work of Kent and Brown, was influenced deeply by the work of such landscape painters as

Claude Lorrain and also somewhat by ideas introduced from China. But its most vital characteristics were inspired, like those of the Italian villas, by local conditions of climate, vegetation, topography, and modes of life. In the deer-parks of England there had long before been produced, without much conscious artistic control, wonderfully beautiful landscapes marked by undulating, open, verdant, universal greensward, upon which as a background were dispersed robust masses of wide-spreading tree-foliage, and occasional thickets of undergrowth. These, with the soft and mellowing atmosphere of the same climate which perfected the greensward and the spreading trees, created an exquisite beauty no less characteristic of England than the contrasting deep shade and brilliant sunshine and turfless distant views are characteristic of Italy.

The "Landscape Style" of England spread over France and other parts of the continent with the Romantic movement, and fell later into extremes and perversions as unfortunate as any of those of formal design. For the formal it substituted the formless, or an obviously theatrical affectation of naturalness, and for æsthetic unity it substituted the Romantic symbol, before it settled to the more rational and sincerely naturalistic style of Repton in England and of Pückler-Muskau in Germany. It is interesting to note how deeply and characteristically climate and local habits of thought based upon climate, affected local adaptations of style in landscape architecture both as the Italian Renaissance influence spread northward through France to England and as the "English" naturalistic influence spread south through France to Italy. In either style the northern type consists essentially of a background of turf and other verdure out of which is cut a more or less shapely pattern consisting of bare surfaces of earth or pavement in the form of paths and roads and terraces and so forth. In the southern type, where turf is essentially exotic, the bare surfaces of earth or pavement form the background of the design while

the turf and other verdure constitute the shapely pattern applied to it. It is not a question of the relative quantity of the two elements, but how they are used that makes the difference between a pattern of green on gray and one of gray on green.

There are charming formal gardens dating from many different centuries in England, and based on English tradition in America from Colonial times onward, in which the Italian Renaissance influence can be traced, but which are truly English and truly American, because only those qualities of Italian work were borrowed and adapted which were not contradicted by the local climate and vegetation and way of living, and which lent themselves to a complete renationalizing, as it were, under new skies, enriching and stimulating the development of good native characteristics. By contrast, some mechanical attempts at more complete or arbitrary imitation of Italian, English, and other foreign styles in America and elsewhere have produced merely barren expatriates, utterly unassimilable and serving only to distract attention from lines of development essentially in accord with the local needs and opportunities.

As in all art, it is not the *name* of what you do that counts, but how you do it in relation to time, place, and surroundings.

BIBLIOGRAPHY

American Society of Landscape Architects, *Transactions*. From its inception in 1899 to the end of 1908. Harrisburg, Pa., 1912. *Transactions*, 1909–1921. Amsterdam, N. Y. (1922 in press.)

André, Édouard, *L'Art des Jardins*. Paris, 1879.

Brown, Glenn, editor, *European and Japanese Gardens*, edited for the American Institute of Architects. Philadelphia, 1902.

Conder, Josiah, *Landscape Gardening in Japan*. Tokio, 1893.

Downing, Andrew Jackson, *A Treatise on the Theory and Practice of Landscape Gardening*, adapted to North America; with a view to the improvement of country residences. New York, 1841.

Eliot, Charles William, *Charles Eliot, Landscape Architect*, a lover of nature and of his kind, who trained himself for a new profession, practiced it happily, and through it wrought much good. Boston, 1902.

Gothein, Marie Luise, *Geschichte der Gartenkunst*. Herausgeg mit Unterstützung der Königlichen Akademie des Bauwesens in Berlin. Jena, 1914.

Hamerton, P. G., *Landscape*. London, 1885.

Hubbard, H. V., and Kimball, Theodora, *An Introduction to the Study of Landscape Design*. New York, 1917.

Hubbard, H. V., and Kimball, Theodora, *Landscape Architecture;* a comprehensive classification for books, plans, photographs, plates and other collected material. Cambridge, Mass., 1920.

Jekyll, Gertrude, and Weaver, Lawrence, *Gardens for Small Country Houses*. London and New York, 1912.

Loudon, John Claudius, *An Eycyclopedia of Gardening*, comprising the theory and practice of horticulture, floriculture, arboriculture and landscape gardening. London, 1822. (Also many later editions, from 1850 as revised and improved by Mrs. Loudon.)

Mawson, Thomas H., *The Art and Craft of Garden Making*. 4th edition. London and New York, 1912.

Meyer, Franz Sales, and Ries, Friedrich, *Die Gartenkunst in Wort und Bild*. Leipsig, 1904 and enlarged 1914. (Published in 1911 as *Gartentechnik und Gartenkunst*.)

Nichols, Rose Standish, *English Pleasure Gardens*. New York, 1902.

Olmsted, Frederick Law, Sr., *Notes on the Plan of Franklin Park and Related Matters*. Boston, 1886.

Parsons, Samuel, *The Art of Landscape Architecture;* its development and its application to modern landscape gardening. New York, 1915.

Phillips, E. M., *The Gardens of Italy*, with historical and descriptive notes. Edited by Arthur T. Bolton. New York, 1920.

Price, Sir Uvedale, *An Essay on the Picturesque*, as compared with the Sublime and the Beautiful; and, on the use of studying pictures, for the purpose of improving real landscape. London. Printed for J. Robson, 2 v., 1794–1798. (Also several later editions, with additions.)

PÜCKLER-MUSKAU, PRINCE VON, *Hints on Landscape Gardening.* Translated by Bernhard Sickert and edited by Samuel Parsons. Boston, 1917.

REPTON, HUMPHREY, *Sketches and Hints on Landscape Gardening.* Collected from designs and observations now in the possession of the different noblemen and gentlemen, for whose use they were originally made. The whole tending to establish fixed principles in the art of laying out ground. London, 1794.

REPTON, HUMPHREY, *Observations on the Theory and Practice of Landscape Gardening.* London. Printed for J. Taylor, 1803.

Both the *Sketches* and *Observations* are included with Repton's work in a one-volume edition (1840) by J. C. Loudon. A briefer American edition was prepared by John Nolen, entitled *The Art of Landscape Gardening*, Boston, 1907.

SIEVEKING, ALBERT FORBES, editor, *Gardens Ancient and Modern.* London, 1885. (Also published in 1899 as *The Praise of Gardens.*)

SIMONDS, O. C., *Landscape-gardening.* New York, 1920.

SITWELL, SIR GEORGE, *An Essay on the Making of Gardens*, being a study of old Italian Gardens, of the nature of beauty and the principles involved in garden design. London, 1909.

STEIN, HENRI, *Les Jardins de France des origines à la fin du XVIII^e siècle . . . reproductions d'après des estampes anciennes et des documents originaux inédits.* Paris, preface dated 1913.

STUART, C. M. VILLIERS, *Gardens of the great Mughals.* London, 1913.

SYPESTEYN, C. H. C. A. VAN, *Oud-Nederlandsche Tuinkunst:* geschiedkundig overzicht van de Nederlandsche tuinarchitectuur van de 15^de^ tot de 19^de^ eeuw. 's-Gravenhage, 1910.

TABOR, GRACE, *Old-fashioned Gardening;* a history and a reconstruction. New York, 1913.

TRIGGS, H. INIGO, *Garden Craft in Europe.* London, 1913.

TRIGGS, H. INIGO, *Formal Gardens in England and Scotland*, their planning, and arrangement, architectural and ornamental features. Illustrated by drawings by the author and photographs by Charles Latham. London, 1902.

TRIGGS, H. INIGO, *The Art of Garden Design in Italy*, illustrated by photographs and plans and numerous sketches in the text taken from the original surveys and plans especially made by the author and photographs by Mrs. Aubrey Le Blond. London, 1906.

VAN RENSSELAER, M. G. (MRS. SCHUYLER), *Art Out-of-doors.* Hints on good taste in gardening. New York, 1893. (Also later reprints.)

WAUGH, FRANK A., *The Natural Style in Landscape Gardening.* Boston, 1917.

WHATELY, THOMAS, *Observations on Modern Gardening*, published anonymously. London, 1770. (Several later editions.)

Landscape Architecture; a quarterly magazine. Augusta, Me., Landscape Architecture Publishing Co. Official organ of the American Society of Landscape Architects. (The only technical periodical devoted exclusively to the subject of landscape architecture.)

CITY PLANNING

BY

EDWARD H. BENNETT

CHAPTER VIII

CITY PLANNING

I. INTRODUCTION

The building of cities is as old as community life. The Greek conception of the conscious entity of their cities is well known and the evolution of the Greek race from the family to the brotherhood, the tribe to the nation with the corresponding gradual formation of an ideal of community existence, the highest of antiquity, has been well told by Fustel de Coulanges in "La Cité Antique." City Planning has been sometimes comprehensive, but more often fragmentary in its expression. In the past it has been an art.

Today city planning is consciously done and if of the highest value, it is practised as an art. Great democracies are aiming to control city development, to plan for betterment of living conditions and at times to add to the beauty of their towns. Fifty-two per cent of our population live in cities. This is significant. The problems of a small growing town persist and become in more acute form those of a large city. Mere size has a value that is relative only, for the civic advantages of cities of over three million inhabitants are by no means apparent. The hamlet growing into the village and the village into the city have created problems which have made themselves felt with increasing force, until it is becoming recognized that the growth of the future must be met by planning ahead.

In the average American city an intense center exists in comparatively placid environs, differing largely from the European city with its more uniform development. We may accept our conditions and attempt to perfect the type; never losing sight of the beauty of plan whilst satisfying economic conditions, and we must aim to carry out our work with a view to fineness in result.

In magnificence of city building the past is far richer in example than the present, and we may study the great European towns for suggestions — Rome, Paris, Madrid, and the more perfect of the smaller towns such as Nancy in France.

Circulation

As in the past the prime necessity now is to get about, to connect one place with another. The study of circulation is placed first in the planning of cities. Our needs are intensified and although gradual evolution has given us relatively more street space than in the past, our conditions have been complicated in proportion.

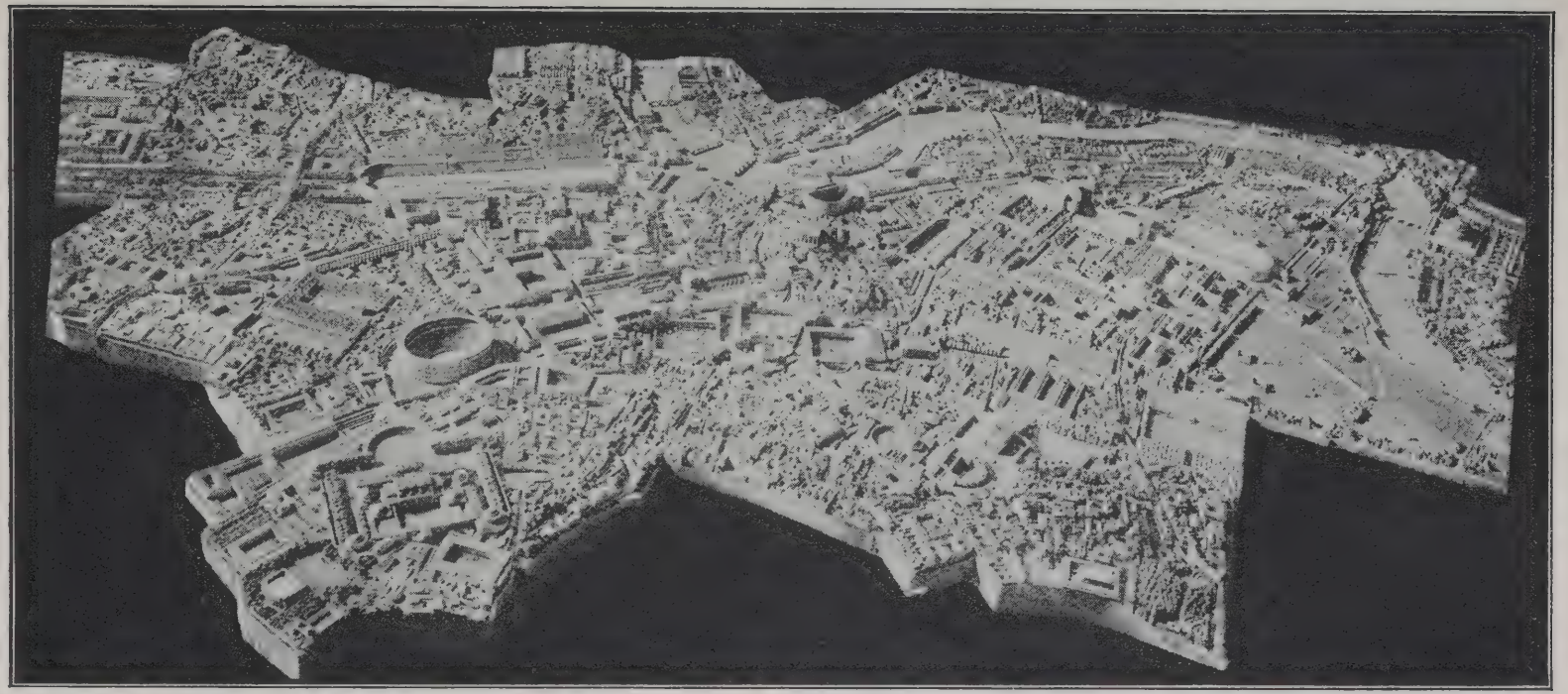
"The Third Satire" of Juvenal,[1] presents this striking picture of the streets of Rome:

The rumbling carts with rumbling carts that meet,
In every winding of the narrow street,
The drivers' efforts to inforce their way,
Their clamorous curses at each casual stay,
From drowsy Drusus all his sleep would take,
And keep the calves of Proteus broad awake!
If business call, obsequious crowds divide,
While o'er their heads the rich securely ride.

Hark groaning on, th' unwieldy waggon spreads
Its cumbrous freight, tremendous! o'er our heads,
Projecting elm or pine, that nods on high,
And threatens death to every passer by,
Heavens! should the axle break which bears a weight
Of huge Ligurian stone, and pour the freight
On the pale crowd beneath; what would remain?

Such in the early Empire were the streets of the Roman capital, the symbol of power and magnificence of all time, the city of superb palaces, great baths, tenements ten stories

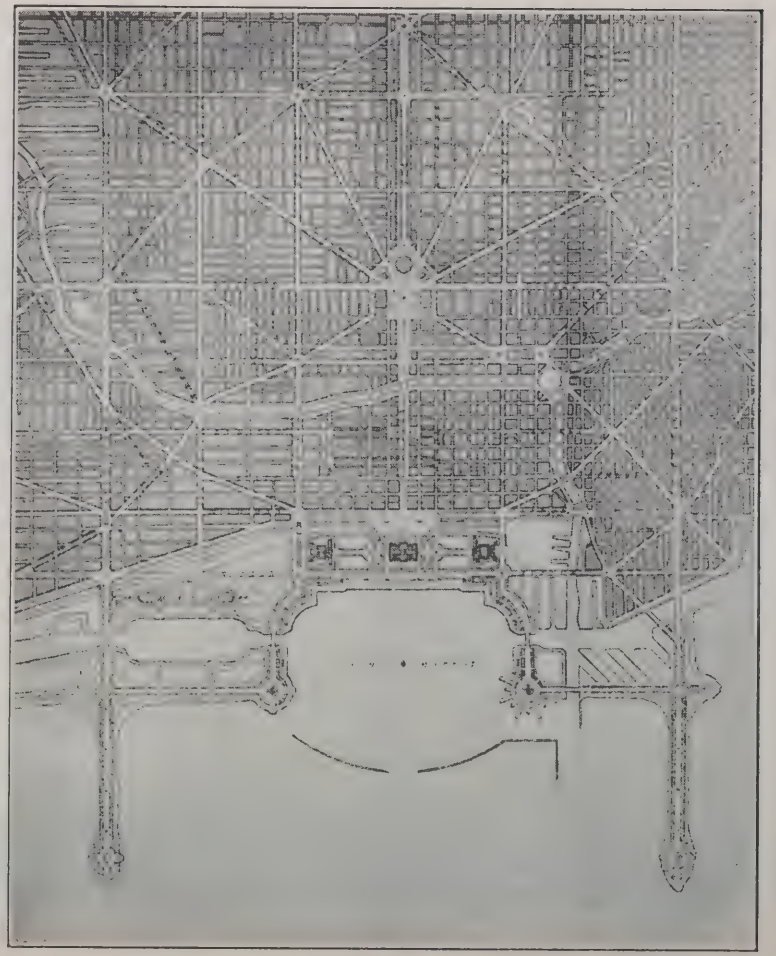
[1] *The Satires of Juvenal.* Translated by Wm. Gifford.



ANCIENT ROME, FROM A MODEL, M. Paul Bigot

PLATE 115

1



2

1. ANCIENT CAMBALUC, NOW THE CITY OF PEKING
2. CENTRE OF CHICAGO, SHOWING RADIAL CIRCUIT AND WATERFRONT TREATMENT WITH MUNICIPAL BUILDINGS

D. H. Burnham and E. H. Bennett

in height, of forums and other gathering places — an agglomeration of many centuries bound together by winding streets. It was an organism, unplanned as a whole even if these streets were related in part to the dominant axial ways characteristic of the time, the chief of which was the Appian Way and its extensions.

An edict of Julius Caesar prohibited the streets during the day to vehicles of commerce. Obviously in capacity and design the streets of Rome were inadequate. The Romans were conscious of the need for planning; this is indicated by the layout of contemporary small towns, notably in Timgad, the Roman colony in Northern Africa. Here, as in Pompeii, the axial streets, decumanus major and minor are clearly expressed running at right angles with one another. At their intersection the forum, the temples, the basilicas and the market place are located.

If the streets of Rome were lacking in system or uniformity they made up for it in their architectural splendor and the advantage taken of opportunities for effect presented by their various turnings and angles. The Sacra Via was the most notable. As it became finer in development and in the monuments which fronted on it, its continuity was sacrificed to the sites of the various buildings which were erected to the glory of rulers or of the gods.

In contrast to Rome stood Babylon, the famous and magnificent city of the ancient world. It was built on a very definite plan, covered a tremendous area and was enclosed by a wall forty miles in circumference. We are told that "the whole area was laid out with straight streets, or perhaps one should say with roads — for the houses cannot have been continuous along them — which cut one another everywhere at right angles. The wall of the town was pierced with a hundred gates, twenty-five — we may suppose — in each face, and the roads led straight to these portals, the whole area being thus cut up into square blocks." [1] Peking or

[1] Rawlinson, *Ancient Monarchies*.

ancient Cambaluc and other cities of the Chinese Empire were similarly arranged and had dominant axial streets, interestingly described by Marco Polo.

To the cities of antiquity defense against enemies was of vital interest and had to be planned for, but then as now commerce was the life of the city. At variance with our modern cities in the United States, where barriers are largely topographical, the outlines of the city of Athens and of the Piraeus were traced within its protecting walls. The roads of Athens seem inadequate, one of its principal arteries south of the Acropolis being from twelve to fifteen feet wide. We are told by Gardner that the streets were generally so narrow that it was the custom for the residents to knock on their doors from within before opening them to the street, in order to prevent accidents. The citizens of Athens rarely, if ever, rode in vehicles unless bound on a journey to some distant point. If the streets lacked a general plan they did not lack in character and charm. Many of them must have been a succession of beautiful pictures. The street of the Tripods was embellished to a high degree and was famous for the works of art it contained, most of them apparently of the fourth century. They included the famous Choragic monument of Lysicrates.

In spite of the magnificent rebuilding of Athens in earlier years, as is pointed out by Gardner [1] there was probably no opportunity for a complete replanning. The older buildings around the Agora were already associated with their sites by a long tradition, and new buildings had to be adapted to conditions already rigidly prescribed. The similarity between this as an economic situation and that of modern cities is interesting to note; also its difference as to sentiment, religious and civic, now so greatly lacking.

In sharp contrast to Athens was the plan of the Piraeus which had been laid out "under Themistocles by the Milesian Architect Hippodamus after the sumptuous and regular style

[1] Ernest Arthur Gardner, *Ancient Athens*.

customary in the great Ionian Cities." The plan of the Piraeus shows a resemblance to the modern American City with its parallel streets and rectangular blocks.

Under Napoleon III and Baron Haussmann, Paris gave to the world the greatest example of execution in comprehensive street planning, anticipated by the vision of the first Napoleon. The main lines were laid down by the architects of the seventeenth and eighteenth centuries in conscious effort to supersede the groping of previous years. A great design is there. Relation of parts is apparent. We recognize the great arteries of general travel, the main arteries of business, the superb parkways and the minor streets of both business and residence. They are grouped; they radiate; if of major character, they are continuous.

The points of grouping become great plazas, squares or gardens, or simply are enlarged spaces for good circulation. The focal points are controlled architecturally by monuments and at some of them are grouped the public buildings, thus made agreeable and giving an interest and dignity to the street vistas. The river banks are lined with contiguous ways for traffic and quays for commerce at the upper and lower levels. Many of these projects are shown on the Plan des Artistes made in 1793.

Before the war the Paris budgets called for the expenditure of one hundred and eighty millions of dollars for city planning, a sum about equivalent to that spent under the Haussmann transformations covering a period of only thirty-five years. Since the war a competition has been held for a comprehensive plan of development for the entire city. This plan includes the removal of the fortifications and the development of the areas involved into parks, drives and streets.

Juvenal's picture of the streets of Rome might be duplicated for those of the streets of Paris as late as the seventeenth century. All that has been changed by this splendid planning. Similar pictures of congestion of traffic and pedes-

trians may also be painted of other intense modern centers. In London the traffic on Holborn alone suffers a delay of at least one half hour per trip for each vehicle by which it is used. The average speed of vehicles using the Chicago loop is three miles per hour, as estimated. It is similar to, though probably worse than, most other large cities of the United States and is due, apart from the actual volume of traffic, to interference at block crossings, to the street car turnings and to the mixture of all types of vehicles. From fifty to sixty thousand vehicles daily enter the loop in Chicago, an area of one quarter square mile. The Michigan Avenue widening and the double deck bridge have relieved this traffic. Circulation is more free. The River Front widening will go further. Some fifteen thousand team and truck movements a day will be removed and a better circulation provided by a two level street. These improvements are on two sides of a great quadrangle which has been planned deliberately as a collector for traffic to relieve the center of unnecessary cross movement.

New York by a scientific synchronized control of its traffic on Fifth Avenue has accelerated the movement very greatly. These are illustrations of the two principal means of relief of traffic — routing around and control of movement — met sometimes by costly methods of widening of main thoroughfares crossing the actual congested area.

Our plans of today recognize further differentiation of streets than does the Paris plan — dual streets with street cars on one and light automobile traffic on the other, streets for teaming or trucking paralleling the railroads, and generally a major and minor street system.

In the business centers street capacities are being studied, the basis being that of the number of traffic units per hour at a designated speed; by this means a street system may be planned in which traffic capacity is related closely to the volume of business produced in certain areas. The bulk of actual building is a large factor in this study. One way

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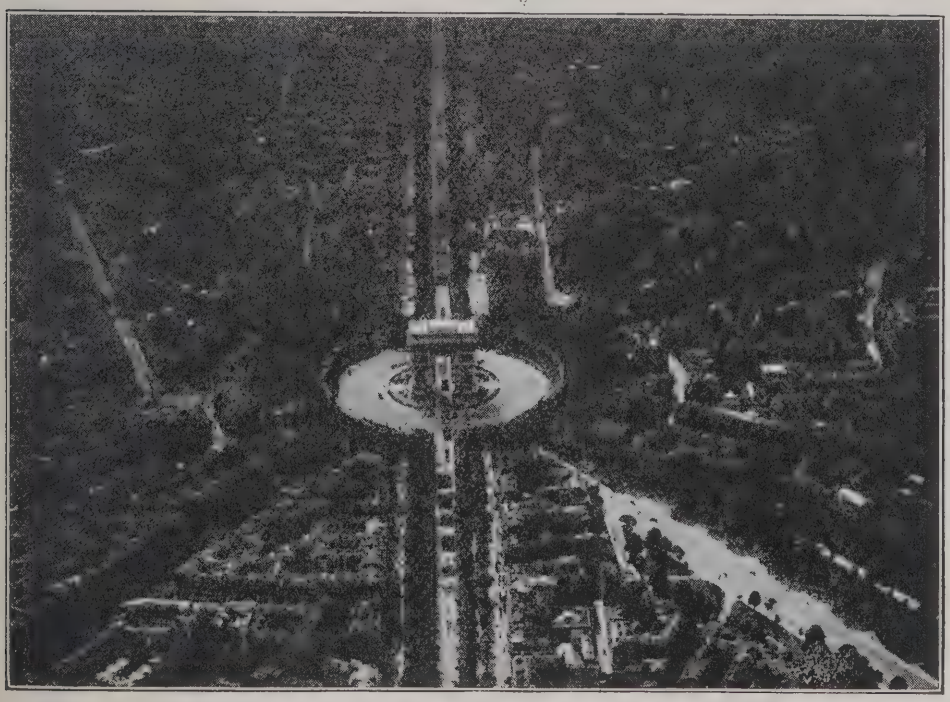
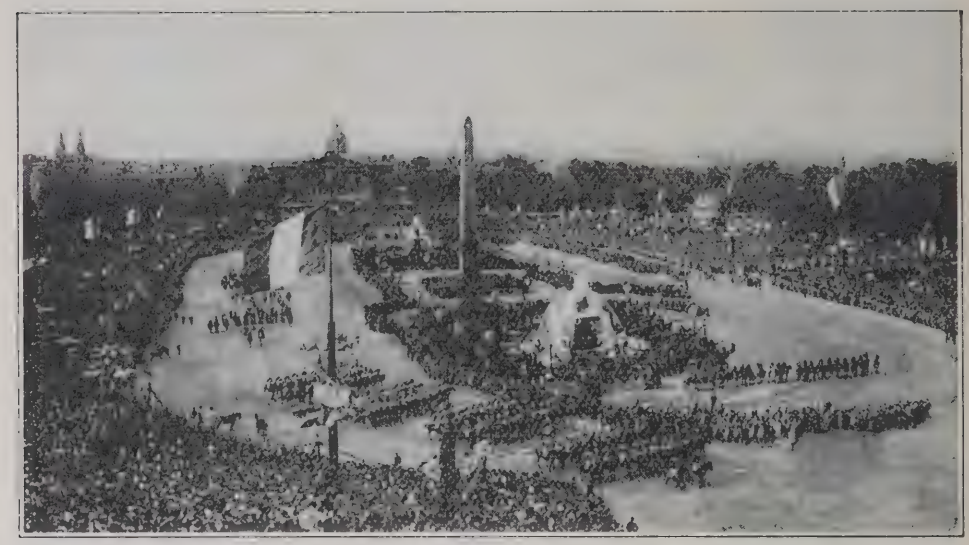


2

1. PARIS IN 1871, SHOWING (in darker lines) NEW STREETS OF THE HAUSMANN REGIME
2. PARIS, LOOKING DOWN THE CHAMPS ELYSÉES FROM THE PLACE DE L'ETOILE

PLATE 117



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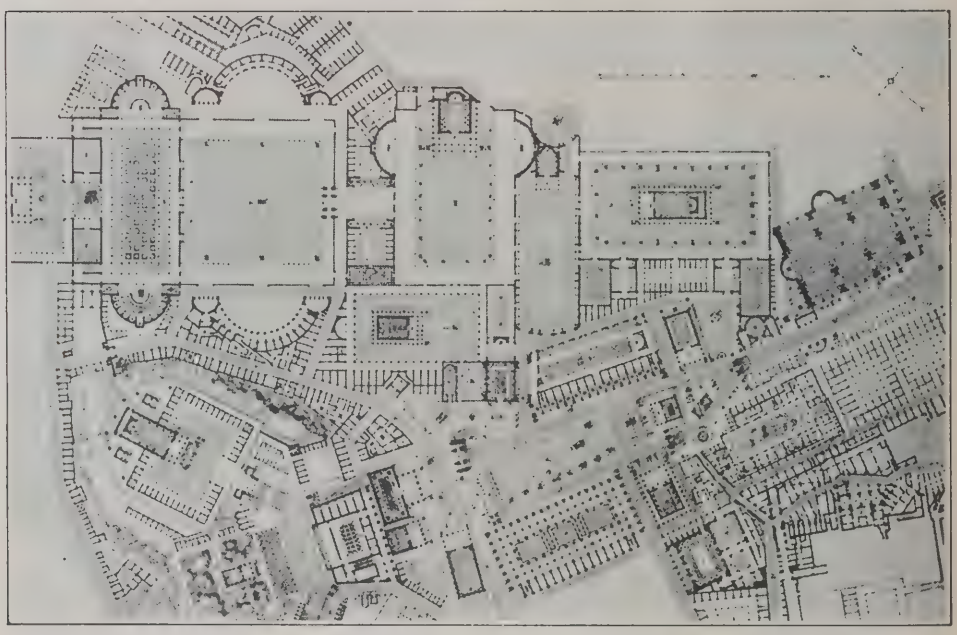

2

1. PLACE DE LA CONCORDE, PARIS, July 14, 1919, THE FINEST OF ALL SQUARES
2. ROME, THE ROMAN FORUM AND THE FORUM OF THE CAESARS

streets, arcaded sidewalks, and all such refinements are conceived not only for today but so that their capacities may be good for the relatively complete growth of the city being planned.

II. TRANSPORTATION

Large cities with few exceptions owe their origin to advantages of location. Accessibility, either by road, river or ocean bay has been the determining factor in modern times. The fascination to the human race of movement has been translated into every possible form of transportation. The caravan has given place to the railroad, and now enters the new factor of air transportation. The elimination of the picturesque from travel by railroads is restored for the time being by the air.

We recognize, however, that without planning in advance air service will become, even though practically useful, a nuisance so far as the finer development of our cities is concerned, as have become the railroads, strictly speaking, from the point of view of civic beauty. That this is not the fault of the railroads is self evident. The uncontrolled growth of our cities which have absorbed into their systems the endless tracks and yards of the steam roads, all of the smoke, dirt and noise has created the situation. Terminals, rail, water and air, freight and passenger, are among the most vital elements in city life. It is essential that they be placed well for economic use, but it is also right that they be designed to fit the general plan.

The economic life of cities depends greatly on the location and arrangement of these terminals. Adequate attention should be given to their proper development and to the economic handling of freight and passengers. The terminals should be arranged to allow of a proper expansion of areas suitable for other purposes. Where the contours are rolling, natural economic selection may govern the location of the rail lines and consequently of the factory districts, but where

the ground is flat, careful design is necessary and strict control must be exercised for the benefit of all.

A city plan will therefore indicate the location of such transportation lines as may be necessary to the needs of the population. To this end the suggestions would be coördinated with the zoning plans because the zoning plans will affect the density of population and therefore will have a direct bearing on the means of transportation as well as on the street system, both as to direction and capacity. This study leads to suggestions on rearrangement or extension of the railroad facilities, to the determination of the capacities of the industrial and housing areas suggested for development, and to the provision of the transportation facilities necessary to flexibility in the distribution of the workers of a city.

The various forms of transportation, steam, electric, elevated, subways and street car lines, are bound up with the street plan. Some of the streets are governed wholly by the location of the railroads, such as the routes for teaming or hauling of merchandise by trucks. Modern conditions are developing the motor truck so that streets leading from rail centers to industrial districts become a part of the transportation system.

In our blackened cities a paramount necessity is the elimination of smoke and of noise. The steam locomotive is a contributor to these evils. Some steps in advance have been made in various cities with regard to electrification of the roads, notably in New York. The recent agreement affecting the Chicago lake front situation and the electrification of the Illinois Central Railroad is significant. Clean air and bright sunshine should be restored to our great centers and maintained in the growing towns.

III. ZONING

Second only to circulation modern city planning takes cognizance of the occupancy of land. If it is necessary to

go about freely, so is it equally essential to provide areas for industrial and business activities, areas in which to live agreeably, in quiet and areas for recreation. The almost invariable conflict of these uses in our cities must be eliminated.

Zoning takes care of such matters; it therefore is a matter of vital necessity. Like all city planning matters it is a great human problem. In a city morale is important as in an army. Good city building means good man building. The zoning plan outlines the areas best suited to the occupancies of industry, commercial business and residence. It should provide for the extension of each in the future. It establishes these zones by ordinance subject to modification on appeal of owners to the authorities or a board of appeals.

In a work of fiction W. Somerset Maugham has traced a charming picture. His principal character walks down the boulevard du Mont Parnasse. . . .[1] "There was an easy going air about it and a sunny spaciousness which invited the mind to day dreaming. The trimness of the trees, the vivid whiteness of the houses and the breadth were very agreeable; and he felt himself already thoroughly at home. . . . He came presently to the Avenue de l'Observatoire, and he gave a sigh of pleasure at the magnificent yet so graceful vista. . . . He came to the Gardens of Luxembourg. Children were playing, nurses with long ribbons walked slowly two by two, busy men passed through with satchels under their arms, youths strangely dressed. The scene was formal and dainty; nature was arranged and ordered, but so exquisitely that nature unordered and unarranged seemed barbaric."

Here is a scene duplicated in many parts of Paris, and for that matter in many other cities of fine development. It portrays a well laid out area; well paved roadways, tree bordered walks and fine lamp standards. In the distance vista points showing a change of direction in the thoroughfare, of intersection with other streets; a vision of exquisite gardens. It represents the establishment of stable conditions by con-

[1] W. Somerset Maugham, *Of Human Bondage.*

trol of building development. It is the setting of a quiet everyday life, an agreeable place to live; consistent, uniform and fine, because it is not injured by the intrusion of factory or other utility. Industry has been provided for in its proper location. It is important to realize that such things rarely happen unless deliberately planned.

Zoning provisions essential in a town where topographical conditions do not exert control, are of great service in the stabilization of real estate and building values and the general promotion of health and welfare of a community. They are of value in preserving the appearance of order of a city and in laying a foundation for its attractiveness and architectural beauty, because in addition to controlling the uses to which the real estate shall be put, zoning provides regulations for the height of buildings and the areas of the lots which they shall occupy. Zoning regulations, especially the regulations on heights and areas of buildings, give an opportunity to control the density of population. Some of the recent plans go so far as to designate the limit of the number of persons per acre in certain areas.

It is not always necessary that the population density should be low. Concentration is of great economic value in the business centers of our cities. The tall office building — if not overdone — is essentially of value, permitting as it does the quick transaction of business and a saving of time. Concentration in hotels in central areas is necessary; so also is that in flats and apartment houses; expansion in our large cities would be otherwise too great. Apartment houses, or multiple family houses, will generally tend to displace existing one family house districts, because the total values in such areas may be generally higher and the returns greater. However, if the latter are provided for, there will be no danger that a haphazard growth will destroy the value of the one family house districts and bring about a general loss to the community.

It should be the aim to induce natural and automatic

zoning by proper general design or revision of plan. In Ottawa, the capital of Canada, plans provide for the reorganization of the railroads on more economic lines, for the concentration of industry and for free expansion of residence areas. The zoning and height regulation plans have been designed with a view to the control of the growth of this capital city along fine lines, a symbol of authority and of order.

Zoning provides the city planner with the means of moulding his city of the future. It is a great artistic opportunity taken hand in hand with the general layout of the city. Let it not be thought, however, that the plans of today, even so perfectly and scientifically prepared as they may be, will control for all time. A foundational plan should be laid but the modeling of a city is subject to the ages. As a city grows ever increasing opportunities may be expected.

Two distinctive cities, dissimilar in topography, are Rome and Paris. Rome is a city of hills, its magnificence, ancient and modern, bound up essentially with its topographical formation; Paris is a city of more level contours, though not lacking in superb eminences, whose magnificence and beauty are the result of the finer and more consistent arrangement and relations of its great city planning features. Superb and compelling as is the Roman capital, it is rather the Paris ideal of consistently working toward a comprehensive plan of related parts that should control modern effort.

In the third century Rome contained as many as forty thousand houses, fifteen hundred palaces and a thousand public buildings such as thermae, basilicas, temples, theatres, circuses, porticoes, et cetera. The height of some of these buildings was a noticeable feature, for we are told that Augustus sponsored a law against the raising of private houses above seventy feet, while Trajan made an effort to reduce the maximum height to sixty feet. We read further that Rome was divided by Augustus into fourteen regions, each of equal area and remarkably uniform in the number of

"insulae" or tenement houses. The palaces, varying in number, indicate the more aristocratic and better built areas. This variation, however, is wholly the result of the law of natural selection.

The transformations that took place in the ancient city of Rome are indicative of the growth of the city. Rome was constantly changing to accommodate itself to its growth. The development of magnificent forums and stately edifices are but steps in the transformations in that ancient city. The development of the old market place into a magnificent forum surrounded by stately edifices is a romance in itself. We read that: "the grand era of transformation begins with the year 54 B.C., when L. Æmilius Paullus bought private property on the north side and built his superb Basilica Æmilia. The reason for such a costly undertaking (about 12,000,000 francs) is given by Cicero: *ut forum laxaremus*, to enlarge the Forum. The work of Æmilius Paullus was continued by Julius Caesar, who purchased other private property and built an extension — the Forum Julium — at a cost of 20,000,000 francs. Augustus followed the example of Caesar, and, in continuation of the two fora, built a third one named Forum Augustum or Forum Martis, from the Temple of Mars the Avenger, which stood at one end of it. Augustus himself explains in his 'Res Gestae' the necessity of this work, by the inadequacy of the two existing fora for the transaction of business and the administration of justice."[1]

Vespasian cleared and repaired the streets and the temples, for which he was rewarded with the title "Restitutor Ædium Sacrarum" and Domitian, son of Vespasian, rebuilt a large area on the north and west sides of the Forum, under a new piano regolatore.

The population of Rome under the late Empire is estimated at upwards of one million inhabitants. Even in a city of this great size the foregoing are simply evidences of local

[1] Rodolfo Lanciani, *Ruins and Excavations of Ancient Rome.*

transformations. There was no comprehensive plan for the building of the city as a whole, and except for the loss of its ancient monuments and the widening of certain streets Rome today differs not so greatly from ancient Rome. Never an industrial city, it has grown even in modern times without stringent regulations.

No finer description, to the knowledge of the author, of modern Rome is to be found than in "Rome" by Émile Zola. It is a vivid description of the life, grandeur, concentration and growth of that city. It is one vision of architectural splendor after another created on the same sites in ancient Rome, such as may stimulate us of today to mould our cities and make them beautiful.

"And the Rome that Pierre beheld was a Rome steeped in mildness, a visionary Rome which seemed to evaporate in the clear sunshine. A fine bluish haze, scarcely perceptible, as delicate as gauze, hovered over the roofs of the low-lying districts; whilst the vast Compagna, the distant hills, died away in a pale pink flush. At first Pierre distinguished nothing, sought no particular edifice or spot, but gave sight and soul alike to the whole of Rome, to the living colossus spread out before him, on a soil compounded of the dust of generations. Each century had renewed the city's glory as with the sap of immortal youth."

His pictures of the streets of Rome, with their alternations of light and shade are compelling. "The street again made a sudden bend, and in one corner beyond a short dim alley, there was a blazing gap of light. On a lower level appeared a white square, a well of sunshine, filled with a blinding golden dust; and amidst all that morning glory there arose a gigantic marble column, gilt from base to summit on the side which the sun in rising had laved with its beams for well nigh eighteen hundred years. . . . It was the column of Trajan."

Thus a city has been modeled. The modeling of the modern city is made possible in a large measure by zoning.

The results of the very comprehensive plans and ordinance for New York are splendidly apparent already, certain street silhouettes are forming with a fineness of outline. Light and air are in a greater measure assured.

Paris, on the other hand, the capital of the most logical race of the world, has been controlled by its general street plan, the production of its best architectural and governmental minds and further by comprehensive laws and regulations under intelligent rulers. But for these laws, Paris, with all its superb monuments, might have remained a conglomerate mass similar to most mediaeval towns, served by narrow streets, its main highways and even its bridges obstructed and the light almost excluded by the overhanging stories of its houses.

The city of Paris put street planning and industrial zoning laws into operation in the seventeenth and eighteenth centuries. The Edict of December, 1607, put Paris under the régime of La Grande Voirie (the Major Street System). This Edict was conceived for the purpose of facilitating the circulation of traffic, which even at that time had become too intense. The Grand Voyer was instructed to suppress all stairways and other projections giving on the public streets and in a general manner "de pourvoir à ce que les rues s'embellissent au mieux que faire se pourra." It was difficult for the officials of La Grande Voirie to arrive at any worth while results with the citizens, as the Edict left many possibilities for arbitration. To remedy this an Arret du Conseil du Roi, February 17, 1665, ordered plans prepared for all roads cared for by the State, and Letters of April 10, 1783, ordered the drawing of a general plan for Paris. This measure was finally made to cover all cities in France by the law of September 16, 1807.

Many Paris laws are specially devoted to hygiene and aesthetics. By the laws on hygiene the endeavor has been made to lower the rate of mortality by varying the size of buildings according to the lots occupied. The Law of March 17, 1791,

Article 7, says: "Any person will be at liberty to ply any trade, art or profession as he shall see fit — with the condition that he conform himself to the regulation of the police, existing or to be established."

The Law of October 15, 1810, relative to factories or workshops, unsuitable, unhealthy, or dangerous, defines: — "a first class — those which should be removed far from residence; a second class — factories or workshops not necessarily far removed from habitations, but which must show to a certainty that their operation will not inconvenience or cause damage to owners of residence; and a third class — those which may remain without inconvenience near residences but must be under police supervision."

In all the Haussmann operations, from 1850 to 1889, the character of development of the streets was carefully considered, and the profiles or cross sections of the streets studied, and heights and set-backs governed according to the width of the streets, and in many cases the architectural façades studied in detail. The law regulating the heights and areas of buildings in Paris, of August, 1902, contains forty-five articles respecting these matters. Heights are fixed according to the width of streets and the details of special cases are carefully worked out.

The operation of these and similar laws through the centuries, laws which are expressive of the general growing culture of the people and the recognition of mutual obligations, has rendered Paris the ordered and lovely city it is today.

It is no mean ambition to create beautiful forms which may control the movements and the placing of a crowd. The Sacra Via, with its architectural triumphs of the day, framed the sacred processions and the military triumphs of Rome. Lined by colonnades, loggias and arcades with their varying levels and differing forms, one sees it literally draped with humanity, giving a brilliant and picturesque spectacle. In modern times, the Champs Elysées in Paris, with the Arc de Triomphe at one end and the Place de la Concorde at the

other, provides a more formal and regular setting for the spectacles of today. Brilliant with bunting by day and artificially illuminated by night, on gala days it is an inspiration to the city planner and architect for all time. If the Roman picture, like those of similar occasions in Athens, is marvelous in its picturesque quality, that of modern times is none the less magnificent and it is rather the guide we must follow. Some of our modern plans have provided such central avenues. Philadelphia has contributed a notable avenue in Fairmont Parkway, fittingly to be crowned by the Art Museum at its termination in the Park with which it connects the center of the city. Imperfectly traced at first, through the efforts of the architects this great avenue has been given its present straight axial line.

In Chicago much is expected from the development of a central axis in the city plan and of Grant Park on the shores of Lake Michigan, the composition of which is balanced on this axis. Looking down from the buildings on Michigan Avenue, many a spectacle has already been seen in the rough framework of the park. The moving crowds have created many a superb picture, but with the regularization of its architectural frame and its completion as planned these gatherings will be more ordered and more beautiful.

Zoning is fundamentally connected with all other factors of city planning. Coördination in the various factors of city planning results in work of the highest value. Zoning, if well schemed, more than any other agency will give quality to growth; it will bind all our other plans in an harmonious manner and in addition it is the aesthetic opportunity. It is the architecture, in large, of cities.

IV. PARKS

The provision of parks in cities, especially large cities, is of paramount importance. As early as the third century after Christ spaces, or commons, were set apart in Rome for public recreation. A number at first were laid out by citizens

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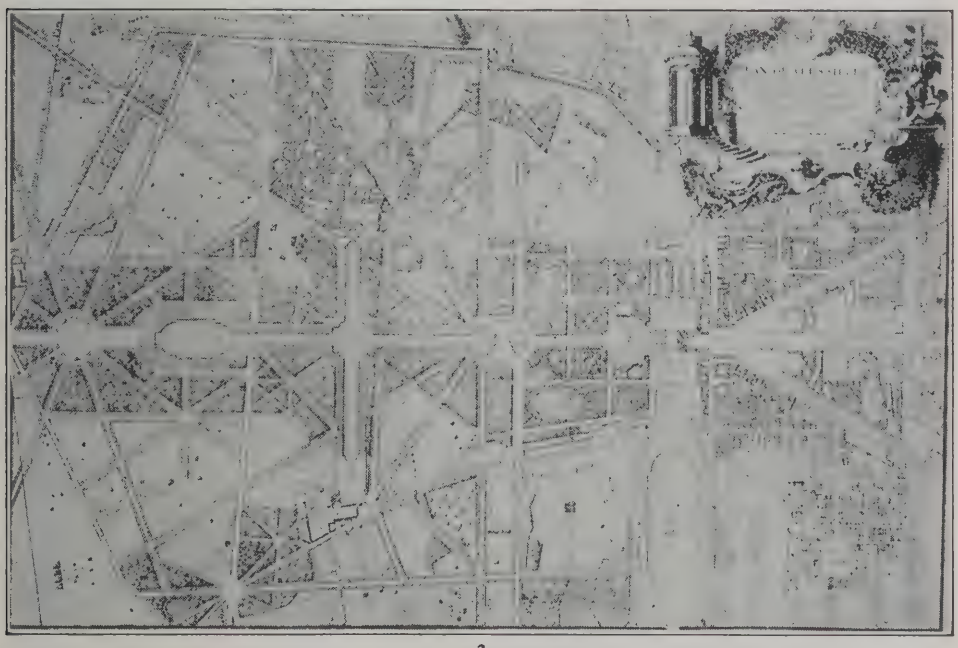

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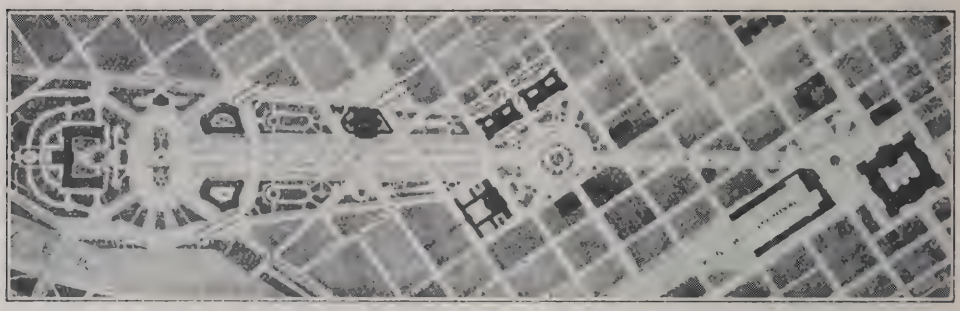
1 and 2. RESULTS OF SET-BACK PROVISIONS IN ZONING ORDINANCE, NEW YORK CITY

3. VERSAILLES, PROTOTYPE OF WASHINGTON, D. C. INFLUENTIAL IN ALL CONTEMPORARY AND SUBSEQUENT EUROPEAN PLANNING



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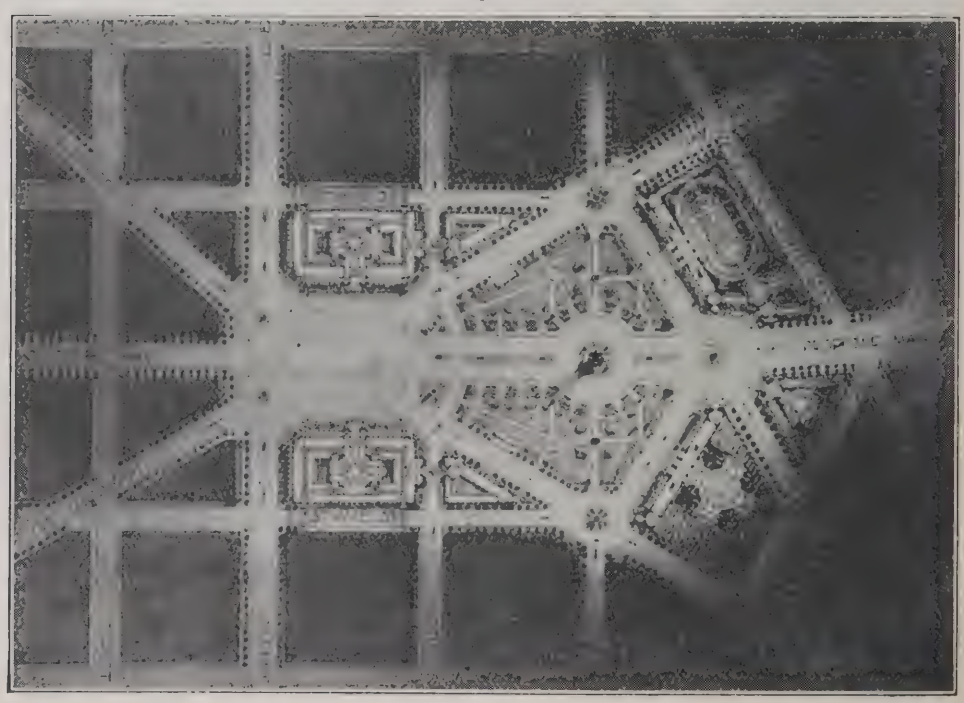

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1. THE PARKWAY, PHILADELPHIA. M. Jacques Gréber. Based on the plan of Trumbauer, Zantzinger and Cret
2. WASHINGTON, D. C. GENERAL PLAN OF THE PARK COMMISSION OF THE DISTRICT OF COLUMBIA. Based on the Plan of L'Enfant.
3. PROPOSED GROUP OF MUNICIPAL BUILDINGS, MINNEAPOLIS. E. H. Bennett

for their personal comfort, but afterwards were absorbed into the imperial domain by purchase, bequest or confiscation. They were fortunately laid out on a scheme sufficiently large to suit the requirements of masses of people. The porticoes of Rome were purposely built to allow space in which the citizens might move about pleasantly in hot or rainy weather; the great baths of that city were for the comfort of the people, to insure healthy bodies. It is interesting to know that Caesar, himself, left his estates as parks for the public.

It is necessary for the democracies of today to create for themselves recreational spaces. If crowded conditions must exist, and they will exist especially in large cities, the one palliative which we may hope to offer is that of a complete and highly developed park system. House the people densely, if necessary, but conserve great areas for recreation. That this is being done in the modern cities, great and small, is reassuring. New York has great acreages on the Hudson, and Boston and Chicago each have about 20,000 acres of Forest Preserves. The latter city is steadily acquiring more.

The Lake Front Park in Chicago of 1700 acres, now assured, is threaded by a lagoon planned for regattas. It will restore the waterfront of the city to the public.

If the park system is important from a point of view of health, so equally is it desirable from the point of view of aesthetic satisfaction. From the point of view of city planning, the park system must be considered as a whole in any city. The fact that parks of all sizes may be associated with the design of the city plan gives to them peculiar qualities. Special attention should be given to the playgrounds, susceptible as they are of beautiful development and fine architectural arrangement, with their gymnasiums, swimming pools, tennis courts and community buildings.

The beautiful parks of Rome crowning the hilltops and framing the city have been the inspiration of more than one plan of parks in modern cities. "And from that beautiful

terrace, so broad and lofty, one of the most wonderful views of Rome was offered to the gaze. Beyond the Tiber, beyond the pale chaos of the new district of the castle meadows, and between the greenery of Monte Mario and the Janiculum arose St. Peter's. Then on the left came all the older city, an endless stretch of roofs, a rolling sea of edifices as far as the eye could reach."[1]

The San Francisco plan of 1905 proposed to girdle the city with a band by securing and developing small or large expanses of the unbuilt hilltops surrounding the city. In a hilly city this is a great opportunity and is seen as a necessity when to leave the hills scarred or poorly built is to leave ragged edges to the picture. In cities of flat topography this opportunity does not exist, and the spaces provided must be far-reaching, broad and extensive, allowing opportunity for the creation of great vistas on plain or meadow, and through formal avenues.

The Bois de Boulogne in Paris and Richmond Park near London are superb examples of the larger areas set aside as parks. Of the larger city park order the Pincio Gardens, the Borghese and the Farnese in Rome, the Versailles Gardens, those of St. Cloud and the Luxembourg in Paris are brilliant examples.

Not the least important feature of the Roman parks are the beautiful architectural developments they contained, and, like great French parks, still possess. "In the Horti Liciniani, the Nymphaeum was once covered with mosaics and slabs of porphyry, and its domes incrusted with shells and enamel.

"In the Horti Sallustiani with its Temple of Venus Erycina, the celebrated Silenus and the Dying Gaul are equally famous.

"And so also in the Horti Aciliani, its famous Pincian Hill Terrace."[2]

[1] Émile Zola, *Rome.*

[2] Rodolfo Lanciani, *Ruins and Excavations of Ancient Rome.*

V. PUBLIC BUILDINGS

"The contrast between the magnificence of the public buildings of Athens in the fifth century and the simplicity of private houses is pointed out by Demosthenes; and he uses this contrast to point a moral at the inverted relation of the two in his own day." [1]

The active life of a city is so closely bound up with its public affairs that it is impossible to consider the city apart from its public buildings. Conversely, the subject of public buildings cannot be treated without reference to the whole city.

Public buildings may be said truly to be the representation in ideal form of community ideals. They typify the permanence of the community and should be "what the Acropolis was to Athens or the Forum to Rome and St. Mark's Square to Venice — the free embodiment of civic life." One generation owes it to the next to establish conditions of relative permanence, and if the next generation is to share to any extent the cost of carrying out a scheme, then it is incumbent on the forerunning generation to provide a scheme which will be of fine quality and adequate to the future needs. Recognition must be given to the fine expression of civic ideals, and on the other hand the conditions of economy must not be overlooked.

Modern conditions require a general scheme of development of public buildings with regard to the plan of the city as a whole. The buildings may be grouped in one center or they may be placed in various centers, but they are only rightly placed when they fit into the general plan of the city, when they satisfy economic conditions and when they are readily accessible to the public.

The public building, like the church, has been submerged by the flood of great commercial structures, for the most part uncontrolled. In any logical plan provision should be

[1] Ernest Arthur Gardner, *Ancient Athens*.

made for the expansion of the public buildings to meet the growth and requirements of a community.

There is a wide range to consider in public buildings — from dominant masses of buildings to a single striking unit. The significance of a group of public buildings unsupported by striking natural features of the ground may be very great in a city. The Place de la Concorde in Paris, with its surrounding buildings and those of the Tuilleries, is an example and it is certainly the finest in the world. Again it may be a question of the controlling effect of a single building such as the Palais de Justice at Brussels, or the fine New York Municipal Building.

The ideal public building in a city center is probably the one which suited to its functions clearly expresses them and yet dominates its surroundings by an architecture of accepted monumental forms. A fine example of such a building is the City Hall of San Francisco.

The approaches to civic groups must be studied with care, and consideration should be given to the relation of the buildings to the vistas from the streets. The groups should be placed naturally, in a scale and proportion harmonious with the city. They must be integral parts of the city. Also, there must be a subordination of the masses to some one dominant note, to a general balance in the composition.

The history of the human race is a tale of search for the beautiful. There have been reactions, but in no other medium of expression than that of the building of cities may this be better traced. If the aspirations of individuals have been mirrored in the execution of buildings, so truly has the soul of the mass been mirrored in the building of cities.

The names of Pericles of Athens, the Emperors of Rome, Napoleon III and Haussmann in Paris, General Washington, and L'Enfant in our own capital evoke visions of great achievements in civic life, different and individual in their characteristics and in their beauty as a whole. The finest

results in city planning may be traced to the deliberate conscious action of the few influencing the masses from age to age, assimilated by them and given physical expression. An attempt to understand city planning, except as an expression of the aspirations of humanity for beauty, order, truth — call it what we will — is time wasted.

The finest purpose of city planning is to create a beautiful setting for human life and activities, to plan the setting of everyday life as well as those suited to great public events.

The rich examples of the various Expositions in Europe and in America, though wrought in staff, show well the possibilities of city planning in permanent form, if only a comprehensive scheme be drafted and the architecture of our cities as a whole be planned. In its completeness and regular arrangement Mr. Burnham used to say of the Chicago Fair: "It is what the Romans would have wished to create in permanent form."

The vision of a well-ordered city is incomparably fine. Early morning, or late evening, almost any city mass will assume a poetry of outline, "and when the evening mist clothes the riverside with poetry, as with a veil, and the poor buildings lose themselves in the dim sky, and the tall chimneys become campanili, and the warehouses are palaces in the night, and the whole city hangs in the heavens, and fairy-land is before us — then the wayfarer hastens home; the working man and the cultured one, the wise man and the one of pleasure, cease to understand, as they have ceased to see, and Nature, who for once, has sung in tune, sings her exquisite song to the artist alone." [1] As a painter or poet one may see with the eyes of Whistler and it is the privilege of planners of cities to crystallize into actual form this kind of a vision.

In planning our cities it is well always to have in mind the truth of the Greek saying: "To make our city loved we must make our city lovely."

[1] James Whistler, *Ten O'Clock.*

BIBLIOGRAPHY

Bennett, Edward H. and Crawford, A. W., *Plan of Minneapolis.* Published by the Civic Commission of Minneapolis, 1917.

Burnham, Daniel H. and Bennett, Edward H., *Plan of Chicago.* Published by The Commercial Club of Chicago, 1909.

Gardner, Ernest Arthur, *Ancient Athens.* New York and London, 1902.

Gifford, William, Translation of *The Satires of Juvenal.* 1803.

Haussmann, Baron Georges Eugene, *Memoirs.* 3 volumes. Paris, 1890–1893.

Lanciani, Rodolfo, *The Ruins and Excavations of Ancient Rome.* Cambridge, 1897.

Lewis, Nelson P., *The Planning of the Modern City.* New York, 1916.

Maugham, W. Somerset, *Of Human Bondage.* New York, 1915.

Nolen, John, Editor, *City Planning.* New York, 1916.

Pray, J. S. and Kimball, T., *City Planning.* Cambridge, 1913.

Rawlinson, George, M. A., *Ancient Monarchies.* New York, 1870.

Town Planning Conference, London 10–15, October, 1910. *Transactions,* The Royal Institute of British Architects, 1911.

Whistler, James A. McNeill, *Ten O'Clock.* Portland, Oregon, 1920.

Zola, Émile, *Rome.* New York and London, 1896.

THE INDUSTRIAL ARTS

BY

HUGER ELLIOTT

CHAPTER IX

THE INDUSTRIAL ARTS

I. INTRODUCTION

When walking along — let us say — New York's Fifth Avenue, we see in the shop windows a multitude of objects gathered from every quarter of the globe which will, sooner or later, take their places in the homes of the people. Here are porcelains from China; brocades from Persia, Italy and France; carved and gilded candlesticks from Spanish churches; pottery from Delft or Copenhagen; an Elizabethan chest and a chair designed by Sheraton; Roman glass unearthed in Asia Minor; Egyptian jewelry; silver cunningly wrought by Spanish-American craftsmen; Japanese cloisonné; coral from the Mediterranean, brass bowls from Russia and rugs from the Near East. We see a profusion of articles beautiful in line and form and color and eloquent of the romance of trade and war and of the love of beauty in maker and purchaser. These things tell us not only of the satisfaction of physical needs — a bench upon which to sit or a bowl from which to eat — but also of the satisfying of the spiritual needs of man in the production of things of beauty. For men have always desired to make beautiful those things which they use; the degree of cultivation which the people of any time or locality have reached is reflected in such products.

The fact that we now see in our larger cities articles gathered from the most distant lands indicates the astonishing development, in the last few decades, of the facilities for transportation and opens a vast field of conjecture concerning, or of investigation of, the development of trade. We picture the many-oared boats of the Phoenicians coasting along the shores of the Mediterranean; caravans toiling across the Arabian desert; Portuguese galleons, bound for India, dou-

bling the Cape of Good Hope; and the steam-driven vessels of modern commerce calling at every port on the seven seas. Ancient trade-routes have been traced by the archaeologist; prehistoric trade relations between vanished races proved by the discovery in graves or buried shrines of fragments of pottery and vessels of beaten gold. It is interesting to trace the routes by which the silks of China reached the palaces of the later Roman emperors; by which the glass of Venice made its way into English homes in the time of Elizabeth or a carpet of the Nearer East appeared in Madrid to play a part in a painting by Velasquez.

The influence of conquered peoples upon their conquerors and of the victors upon those who were subdued, can be followed almost as clearly in an examination of these works of minor fine arts as in the study of the resulting political changes.

The journeyings of the famous "Horses of St. Mark's" present a well-known instance of the vicissitudes to which works of art are subjected. Erected in Constantinople, probably after the sack of some Graeco-Roman city, they were, as spoils of the conquerors, carried to Venice in the thirteenth century to adorn the exterior of the Venetian cathedral, there to influence the works of Donatello and Verrocchio. Again the fortunes of war swept them off; this time to Paris with the armies of Napoleon, only to be restored after his fall. Finally, to save them from possible damage by bombs dropped from aëroplanes, they were, in 1917, removed to Rome. They have but recently been replaced upon their ancient pedestals.

The conquest of Greece by the Romans furnished their architects and craftsmen with a wealth of ornamental motifs. These were later given a new development when the barbarians overthrew the power of Rome. To trace the changes wrought in the decorative application of the acanthus leaf is to study the history of Europe from the fifth century B.C. to the invasion of Italy by Charles VIII and

beyond. Many wares which fostered the development of European craftsmanship were imported from the East during the Crusades. Decorations in the "Egyptian Taste" appeared in France after Napoleon's campaign in Egypt; did space permit, many other instances might be cited.

The spread of religions played their part in the development of the arts. Many ornamental motifs are found to have new meaning when one follows Buddhism into China, Christianity into the wide domains of the Roman Empire, Mohammedanism into India and Spain. Even the Reformation wrought clearly-seen changes in the art of northern Europe and affected that of the new world.

The development of Christian symbolism is a study in itself. Particularly interesting is the naïve adoption of pagan forms to serve the needs of the new faith. The symbol of Bacchus becomes the vine of life; Orpheus reappears as Christ; even the tonsure was borrowed from Egypt, through Rome. Mahomet's strict interpretation of the Mosaic law concerning graven images, although not always observed, turned the creative impulse of his followers toward the development of geometric ornament, producing the rich and distinctive Moslem style. This, in its turn, had an influence upon the Renaissance ornament of Spain after the reconquest of that country by the Christians. The deeper one delves into the human side of the story the more enthralling the study becomes.

Although men have produced, to serve their daily needs, unnumbered articles, these may be grouped under a comparatively few heads. The general form of these objects is fixed by the need which they serve; the spoon, the bowl, the table have the same fundamental characteristics the world over. That which differentiates them is the artistic quality with which they are endowed. One great group of articles — clothing — varies not only in this artistic quality but has been conditioned by climate as well.

The interchange of ideas — and of decorative motifs —

has been so fostered by trade, by wars and by religious movements that before long it may be a matter of surprise to learn that there are any places whose products show local characteristics. Dress is, alas, becoming deplorably uniform (and unbeautiful, for men at least) whereas in earlier times national costume was worn as a matter of course. Says Portia of one of her suitors — "I think he bought his doublet in Italy, his round hose in France, his bonnet in Germany, and his behavior everywhere." Racial differentiation was once observable in every article made by man. An expert, without hesitation, declares this fifteenth-century brocade to be Spanish, this other Italian. A Chinese bowl and one from Persia are easily distinguishable; a bit of Gothic carving from England is quite different from one executed in Italy at the same period. Local decorative characteristics furnish us with an inexhaustible source of delightful study; a mass of material illustrative of the progress of humanity. One wonders whether through the unifying power of the printed page and the photograph all national individuality is to disappear.

It is important that those who deal pictorially with past ages be familiar with local characteristics. No longer may Julius Caesar be played in wig and dressing gown as was the custom in the eighteenth century. Yet recently a celebrated singer appeared in "Aïda" swathed in velvet — a material first produced some fourteen hundred years after the period of the opera. Another actress, playing the part of Cleopatra, reclined upon a rug which could not have been woven until a thousand years after the death of the enthralling queen. Illustrators are often to be found indulging in such anachronisms; and a famous writer, in a tale of the period of Henry VIII, mentions a full length mirror, whereas the largest mirror in England at that time was not more than twenty inches square.

While the needs of men have been more or less the same the world over the articles which serve these needs differed as the artistic impulse differed and as they were affected by

natural resources. The presence of kaolin in China made possible the production of porcelain. Silk was the exclusive product of that country until silk worms had been smuggled out of China. According to tradition this occurred in the sixth century A.D., when two Persian monks, sent for that purpose, escaped with the eggs hidden in sticks of bamboo. Rugs were, and are, made in the Orient, particularly in Asia Minor, because wool was plentiful, earth and vegetable dyes easily procured and time was of little value. That Venice, situated amidst sandy islets, should become a centre for the making of glass was as inevitable as that Pittsburgh should become the steel centre of the United States or Grand Rapids, near the great forests of the Northwest, the chief producer of furniture. For although our transportation facilities make it possible for us to manufacture what we wish where we wish, the cost of moving raw material will more and more tend to develop industries in those places where the necessary supplies are plentiful.

The artistic impulse which differentiates the products of one country from those of another or of the same country at different epochs — France, for instance, in the fourteenth and the eighteenth centuries —; the "genius of the race" which causes these differences, is difficult to analyze. What is it that led the ancient Greeks to produce objects in every way unlike (save in being pleasing in form and color) those made by the contemporary Chinese and which caused the work of the Egyptian craftsmen to differ from that of their fellows in India?

Social and religious ideals — climate and natural resources; these played their part. But there is something else, something deeper and more subtle, which defies analysis; a special feeling for line or form or color; a racial way of visualizing beauty; a psychological bias whose secret we may some day be able to solve. At least all were striving to achieve beauty. And as we broaden and refine our perceptions — freeing them from prejudice and from the con-

trol of passing fads and fashions — we may, through the study of these objects which men have made to serve their daily needs, deduce some of the laws of beauty and increase, for posterity, the number of those works of art which have power to delight and uplift the human spirit.

II. THE MINOR FINE ARTS

A friend of mine was once staying for a few weeks with a relative and was given a bedroom comfortable in every way but which was, to him, almost uninhabitable — for the walls were covered with a paper enriched with a large repeating pattern in staring colors. After some days he found that there was another guest room, with plain walls, and he hesitatingly asked if he might be transferred to that. His hostess looked at him with an appraising glance — then said, with just a suggestion of contempt in her voice: "Oh. . . . You 're one of those people who notice wall-papers!"

It is strange, but regrettably true, that any sensitiveness to beauty of color and form in objects of daily use is looked upon by many as a sign of weakness, oddity or affectation. Why should this be so? Most of us wish to think and act not only according to accepted standards, but according to some ideal — though few formulate their ideals and fewer still mention them. We are usually desirous of being on the side of right in business transactions — that is, we have ideals of honesty and right conduct — why should we not have ideals in the matter of silverware and neckties and magazine covers. It seems hardly right that those who notice and dislike ugly furniture, poorly-designed wall-papers or crude colors in clothes or floor coverings or vases should be looked upon with suspicion or contempt.

The reason is that popular standards in such matters are low: the majority care little about color or form and are therefore impatient of the few who do care. Regarding these things as unimportant they feel that those to whom

they are important are "putting on airs"; having no ideals or standards in these matters they ridicule those who have and accuse them of assuming superiority.

And there is still another side to the matter. Not only do the majority care little about beauty, but by some its effects are actually feared. Because the love of beautiful things does not (although it should) develop the "moral sense" certain persons frown upon any of its manifestations and seem to feel that by giving it thought they are selling themselves to the powers of evil: failing to realize that beauty partakes of Divinity. This attitude seems to be a curious survival of the time when the Fathers of the early Christian Church were fighting paganism; and as the Greeks and Romans worshipped beauty, beauty must be swept away. This phase lasted but a short time, but a revival of the feeling came with certain groups at the time of the Reformation — its effects are still occasionally felt.

The love of beauty has nothing to do with morals or with knowledge. Men whose lives are an inspiration have worshipped in churches whose design and color were all that they should not be. Historians and philosophers have written surrounded by furnishings which would have appalled an illiterate Italian of the fifteenth century. And, on the other hand, men whose lives were far from edifying erected beautiful buildings and lived surrounded by works of minor art of surpassing loveliness. Read, or re-read, Whistler's brilliant "Ten O'Clock" on this theme.

We judge the culture of long-dead civilizations by their standards of beauty in articles of daily use. The taste shown in the jewelry, furniture and utensils of the Egyptians, the Greeks or the people of mediaeval times tells us as much about their ideals as do their buildings or their literature. It is not pleasant to think how our age might be judged should certain of our cut-glass, our "stationary" rocking-chairs or our comic supplements survive.

But the majority of us are indifferent to such things —

we disregard beauty through ignorance of the pleasure which enjoyment of beauty has in store for us.

That ignorance shelters itself behind the worn phrase — "Of course I don't know anything about Art, but I know what I like" — as though knowing nothing about "Art" (whatever the word may mean to the speaker) were a matter to be proud of instead of a mortifying confession of ignorance — and that "knowing what I like" were not a boastful statement founded on that ignorance and an unwillingness to take the trouble to learn. The statement further implies that the speaker has "taste" — though, of course, it may be different from that of the person addressed. No one really wishes to be thought lacking in taste: but the majority are too lazy or too indifferent to learn that there are principles and that standards have differed but little through the ages.

We are surrounded by and every day use objects of "minor art." We sit upon chairs and write upon desks and dine at tables on which are china, glass and silver — we have clocks and vases, curtains at our windows and coverings upon the floors — we wear clothing and read books and magazines. In the selection of each of these articles taste, or its lack, is displayed. Since we must continually be exercising judgment in the purchasing of such things (one has not, alas, any choice in the presents one receives) it were wise to train ourselves to judge wisely — to acquire the more beautiful instead of the less and to sense the pleasure which may be derived from living with objects of beauty — or which are at least inoffensive. The desire for such wisdom is rarely lacking: the means of training taste too often is.

It may be asked — can taste be developed: are there any rules which may guide one in forming one's standards of judgment?

Taste may be trained: and although there are no rules for our guidance there are certain principles which will assist in its development.

These may conveniently be grouped under four headings, as follows:

(1) The material of which an object is made as well as the use to which it is to be put must determine its form.

(2) The structure of the object must control its design.

(3) The ornament (if any) placed upon an article must emphasize its structure.

(4) When ornament derived from nature is used it must be conventionalized.

Let us take these seemingly obvious principles and find whether, in the many articles which we use daily, they are universally applied and in what measure the principles are sound. Unless the reader is willing to look about him and apply the findings in an analysis of the objects by which he is surrounded, little is to be gained by further reading of this chapter.

The material of which an article is made as well as the use to which it is to be put must determine its form.

One can hardly imagine using a fork made of glass, or writing upon a table made only of felt. These are obvious misuses of materials — precluded by the use to which the articles are to be put. But one occasionally finds less glaring examples. Pl. 121 : 1 shows a vase where, with much wasted labor, the surface has been moulded to imitate basket-work: clay wrought in a form suited only to stiff plant fibres. A stump or a boulder may properly serve as a seat — but a block of marble carved to look like a tree-trunk and used as a seat in a cemetery is a glaring example of tactless unreason. A baby-carriage made of wicker is, because of the need of lightness, an instance of the proper use of material. But when an automobile, necessarily constructed of metal, has painted upon its exterior an imitation of wicker-work we have a futile suggestion of an improperly used material. When black and white threads of silk are so woven that at a casual glance the resulting fabric looks like an engraving one would say that the misuse of material could go no further.

Yet these things are not only tolerated, but are admired. The technical skill displayed in such imitative works is held, by the thoughtless, to be clever. They do not deceive — if one were deceived, the point of the cleverness would be lost: it is the fact that the imitation is so nearly successful that arouses admiration in the mind of the unthinking.

The structure of the object must control its design.

Perhaps no better example of the violation of this principle could be found than the piece of furniture shown in Pl. 122: 1, a commode of the period of Louis XVI. In this the design suggests a structure of three vertical parts: whereas, as a matter of fact, the structural division is in two horizontal parts. When a drawer is opened the vertical design is, as it were, cut in two. Could any procedure be more illogical? All the undoubted beauty of workmanship — of fine marquetry and delicate ormolu cannot compensate for the lack of coördination between the actual and the apparent structure of this piece of furniture. This is but one case of many which might be cited: he who is interested in such matters will, as he goes about his daily affairs, have abundant opportunity of noting such lack of proper relation between structure and design, from stone-clad steel building to "Art Nouveau" ash trays.

The fundamental mistake is in the lack of clear thinking on the part of the designer — be he architect or craftsman. Ornament is too often thought of as something applied to the object when its structure is completed: and although ornament is in many cases properly so applied, as in the case of painted furniture, the designer must think of structure and decoration as two parts of one impulse and the form of an object and its embellishment must logically spring from the material of which it is made and from the method of its manufacture. Cast iron should not imitate that which is wrought, nor should the attempt be made to make it assume forms proper only to wood. One is often appalled at the muddle-headedness which must afflict many of our pro-

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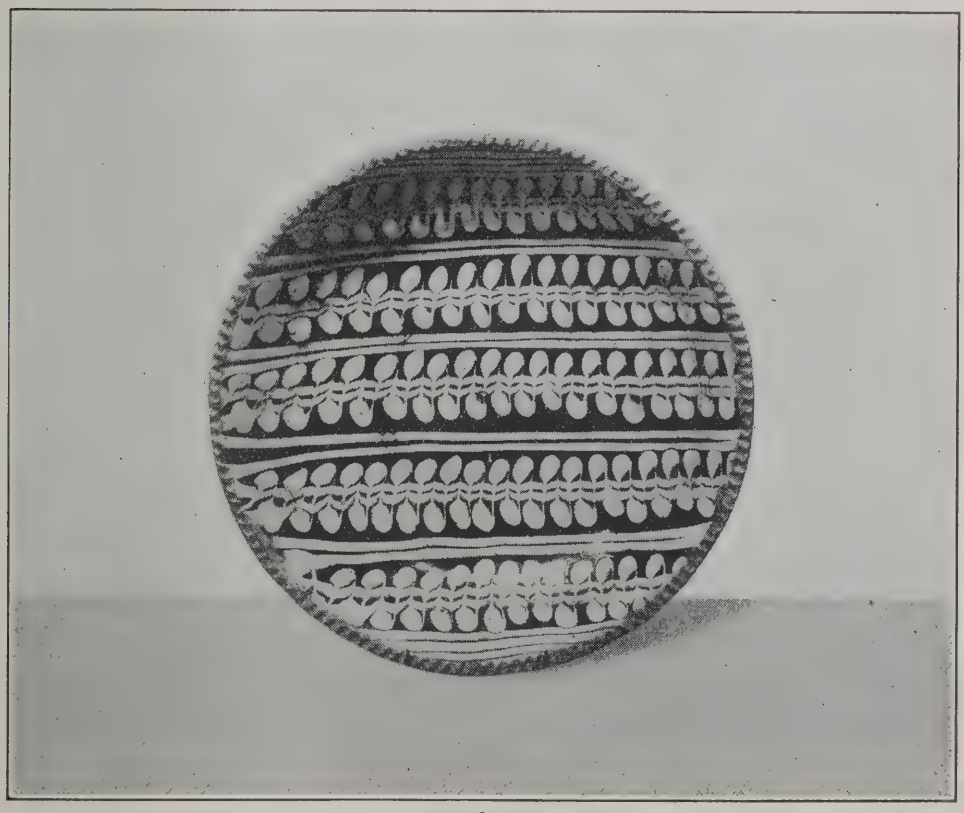
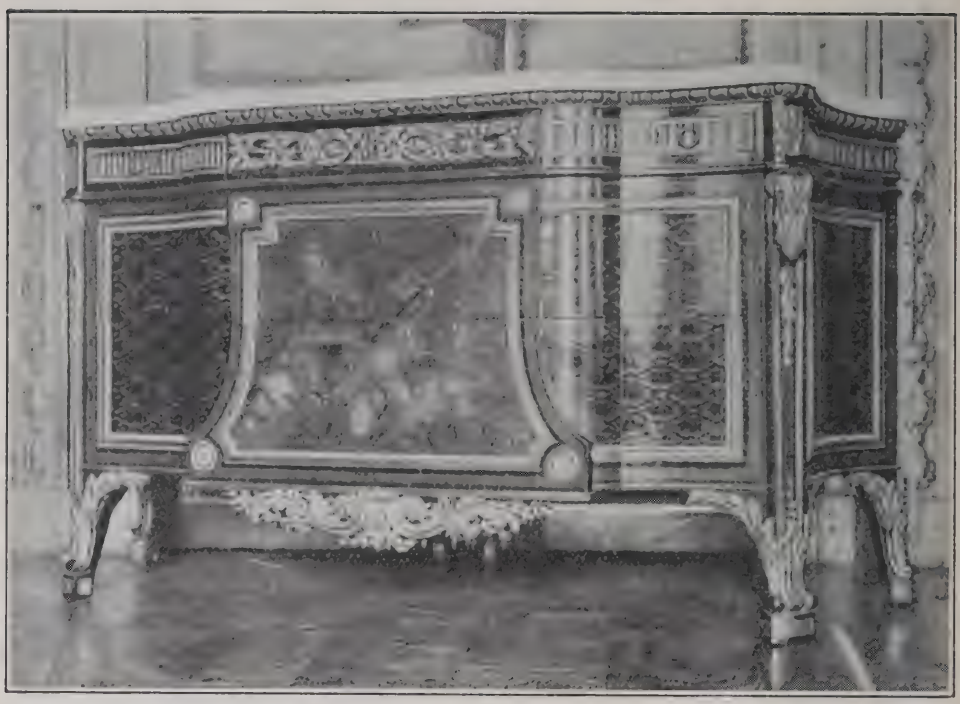


3

1. MISUSE OF MATERIAL. A VASE OF POTTERY
2. PROPER USE OF MATERIAL, CHINESE PORCELAIN, PENNSYLVANIA MUSEUM, PHILADELPHIA
3. MISAPPLIED ORNAMENT. A "SLIP-DECORATED" PLATTER, XVIII CENTURY



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1 LACK OF COÖRDINATION BETWEEN DESIGN AND STRUCTURE. COMMODE. PERIOD OF LOUIS XVI. FONTAINEBLEAU

2 STRUCTURE EMPHASIZED BY ORNAMENT. CHEST OF DRAWERS. ITALIAN XVII CENTURY, PENNSYLVANIA MUSEUM, PHILADELPHIA

ducers, and recalls the story of the shopper who, picking up an object on a counter, said, "What is this?" — and the clerk's reply, "I don't know. I think it was made for a Christmas present."

The ornament (if any) placed upon an article must emphasize its structure.

One should turn to architecture, the most reasoned of the arts, to gain a realization of the way in which this principle has been logically applied. In the classic column, for instance, the ornament is found at top and bottom, in the base and the capital, emphasizing the points where there is a change in function. One can hardly picture a column absolutely featureless at these two points but having a mass of ornament encircling the centre of the shaft. A band of ornament about the upper part of a building — such as the frieze of the Parthenon — is satisfying, marking, as it does, the termination of the wall and the beginning of the ceiling. But a line of enrichment running diagonally across the face of a building would outrage the structural sense of the least observant. Yet the writer has seen a door in which a diagonal panel, filled with glass, was introduced. This is worse than the long oval of glass occasionally seen. But why, it may be asked, is this condemned? For the same reason: the ornament is not suited to the form.

Pl. 121 : 3 shows an old English slip-decorated platter which makes clear the point under discussion. This platter is circular in form, with a centre and a rim. This rim is the boundary of the field: it should, therefore, be recognized. But in this example the ornament cuts across the field and no attention is paid to the rim: it is an "all-over" pattern, capable of indefinite extension, wrongly used. A plate, if decorated, should be enriched with a design suited to a circular field with a proper definition of the edge. The same reasoning holds true of a rug or a carpet. These are more pleasing with borders than without, since the border echoes the structural limit or edge and gives what Henry James (writing of the

new wrought-iron fence enclosing the Harvard Yard) called "the decency of the definite" — a phrase which might well be kept in mind by sculptor and painter as well as the craftsman.

Mention has been made of painted furniture. Although the structure of the piece is in no way affected by the ornament which may be placed on it, there is a very close connection between that structure and the decoration which may properly be used. Not only must it be suitable in character — one would scarcely wish to have a copy of Goya's "Execution of the Condemned" upon a cabinet, or a representation of an automobile race upon the headboard of a bedstead — it must also emphasize the lines of the piece and conform to the spaces to be filled.

Here we may inquire why wall-paper with a large-figured, gaudy pattern is considered unbeautiful. The design is printed upon paper — and as designs, large or small, may be so printed without any question of structural suitability, why is the big, insistent pattern condemned? It is a question of the use of the paper thus enriched. Wall-paper serves as a background for furniture and pictures: if covered with brilliant ornament it is unsuited to its purpose. Some so-called tapestry-papers are printed in "soft" effects which suggest depth. This is equally unreasoned: since the wall is flat, it should so appear — it should not have a spongy appearance nor the suggestion of depth. Concerning the latter point the writer has been asked if the landscape papers in vogue at the beginning of the nineteenth century were faulty, since a landscape must suggest depth. Those wall-papers are poor backgrounds for pictures and not particularly pleasing as backgrounds for furniture, but when the landscapes are treated conventionally there is no real suggestion of distance. In such a case the designer is bound by the same laws as is the mural painter: his depth must not convey the sensation of actual depth.

One of the most unfortunate examples of our modern lack

of clear thinking in the matter of the relation of ornament to structure is found in the majority of leaded glass (usually incorrectly referred to as "stained-glass") windows. Such a window is a mosaic of bits of glass held together by strips of lead. This heavy mass must be kept in a vertical position. It is therefore necessary to fasten the fabric to iron bars by means of wires soldered to the lines of lead. The iron bars are fixed in the framework of the window. The bars, it will thus appear, are structurally the most important part of the window and should be emphasized. But the average designer tries to ignore them. He plates parts of the design with three and even four sheets of opalescent glass (disfiguring the exterior of the window and seriously marring the effect of the building) so that the dark line of the bar will, by diffusion of the light, be less noticeable. His mistaken reasons for so doing are given in a subsequent paragraph.

Obvious mistakes in the emphasizing of structure by ornament are rarely made. The designing of a chair with one leg carved and the others left plain is too illogical a proceeding to have been indulged in by even the most tasteless. But the writer has seen a watch case cut in half, diagonally, by a line, — and one side enriched with sprawling squirls and the other left plain. And at present (let us hope that it is a passing fad) we not only have octagonal watch cases but clocks with square, oval or triangular dials. When one stops to think how impossible it is for the hands of these clocks to stretch themselves out to reach the numerals in these non-circular spaces — that the form of the dial should be controlled by the circular movement of the hands — one wonders at the unreason which can design and use such things.

When ornament derived from nature is used it must be conventionalized.

Perhaps the most remarkable imitations of natural forms ever made by the hand of man are the glass flowers in the Museum of Harvard University. They surpass imitations — they appear to be actual flowers and leaves, at least as far as

the sense of sight is concerned. These were made, be it clearly understood, as aids to botanical study — not as works of art. And they are not works of art. For a work of art is a creation, not an imitation.

Imitations seem to delight the unthinking: woven pictures, painted tapestries or pottery baskets. But the thoughtless take still greater delight in imitations of nature. If the embroidered rose is so skilfully done that one can almost sniff its fragrance — if the fish painted upon a dinner-plate looks as though it might move at any moment, nothing, to the tasteless, could be more desirable. Whether they be carved, painted or woven, exact imitations of nature are, by the average man, thoroughly enjoyed: he refuses to reason and to realize that nature is one thing and art another.

Consider the wasted effort expended in attempting to imitate that which cannot be imitated. Can man, with all his skill, achieve the texture of the poppy-petal, the down on the moth's wing or the lustre of the sea-shell? These accomplishments are beyond his utmost skill.

Could he copy them would the effort be worth while? Unless he is to scatter his hand-made sea-shells along the beach and hang his artificial butterfly in the honey-suckle vines there is little use in his making these imitations — for they have no place in man's habitation, surrounded by man-made things. And why imitate, when a higher field is open: why copy when one can create? The former power man shares with the other animals — in exercising the latter he becomes as one sharing Divinity.

Plant and animal forms offer to the designer an inexhaustible source of inspiration. The misuse of these motifs has, perhaps, been unduly fostered in our time by the development of the art of photography. The photograph has filled our eyes with exact representations of the outward aspects of nature (not the inward spirit of the form of the flower or the growth of the plant) and we prefer realism (and nowhere

more than in the realm of painting) rather than abstract interpretations of nature.

The rose is a motif which, conventionalized, is capable of beautiful decorative treatment — as in the Tudor roses of the Gothic period in England. The rose must be conventionalized — be made non-natural, abstract, — when used as a part of a decorative scheme. But the average man is puzzled by forms which suggest roses and yet which do not look real. If a rose is to be used, let it look like a rose, is his feeling. Man's primitive instinct for decoration has been lost and its place taken by photograph-fostered realism. The public must be laboriously brought back to a realization of the proper use of natural forms.

If it should be asked — why *must* the rose be conventionalized — "on whose compulsion must it?" to adapt Shylock's phrase, one can but reply — because otherwise the rose, being naturalistic, will look out of place on a decorated object: on a man-made article which has no relation to anything in nature. It all comes back to the one statement: that Art and Nature are not interchangeable terms. The designer has nothing in common with the naturalist: when the designer is using nature-forms they must be made to obey his laws, not Nature's.

In an earlier paragraph mention was made of leaded-glass windows and of the efforts of certain designers to minimize the effect of the iron bars which are so important a part of the structure of such windows. (Pl. 124.)

It is, again, a question of imitation. The majority of modern designers (and the public whom they have misled) desire windows which look like transparent oil paintings, with figures and landscapes which vie with nature in color and form. Horizontal bars of black across a painting would be out of place: in a window which looks like such a painting they are likewise offensive. Hence they are, as far as is possible, obscured. But to obscure, to deny a structural element is, as has been pointed out, illogical. Reason tells us

that since the bars must be there and since in a realistic window these horizontal lines seem out of place, the only thing to do is to avoid realism — to design windows in which the purely decorative element predominates — so to design them that the bars are as pleasing, as necessary, an element of the composition as they are of the structure.

It is particularly to be regretted that the majority of our windows are unbeautiful since they are, in most cases, memorials — and memorials are difficult to remove. For those who erect them take, most unreasonably, the attitude that to question the beauty of the memorial is to reflect upon the character of the person honored.

Many late Renaissance and modern tapestries suffer from a like disregard of the limits beyond which realism must not be carried. A tapestry *can* be so woven that at a distance of ten feet "you can't tell it from an oil painting" — to quote a remark made to the writer while inspecting a modern work-shop where a silk tapestry was being made. But is such a result the aim of the tapestry weaver? If that is all, why not paint a picture and be done with it. The charm of the fine tapestry is that it looks like a tapestry — that it has the special characteristics resulting from its method of manufacture: a method which does not easily lend itself to realistic effects.

Upon innumerable objects one finds motifs derived from Nature — upon tableware and bric-a-brac, upon carpets and rugs, wall-papers and book-covers, lamp shades and curtains, jewelry and dress-goods; and in the majority of cases, when the article is of modern design, an unfortunate lack of a realization of the necessity for conventionalization. Why should we have dogs in diamonds as brooches, horse-shoes or riding whips as scarf-pins, alligators in silver as penknife cases, naturalistic game-birds upon dinner plates and such-like manifestations of a tasteless public?

It is because of a primitive, child-like quality in us which takes pleasure in the mere recognition of the fact that *this*

is a dog and *that* a rose: because, through the loss of tradition on the part of designers which followed the introduction of the steam-driven machine, resulting in the production of a thousand unbeautiful objects where but one had been produced, popular taste declined: because, finally, the average man has n't time to think about such things and, if he had the time, does not care to think about them, anyway.

* * * * * *

While granting that the four principles thus briefly outlined are, in the main, reasonable, the reader may yet protest that they do not give him sufficient grounds upon which to base his judgments. How, he may inquire, is he to tell which of two given vases has the finer form or whether this rose and gold brocade is more beautiful than that red and green one?

To acknowledge the truth of such a query is easier than to formulate an answer to it. Analyses of the relative beauty of contrasting forms or of color harmonies are, at best, difficult: a book devoted to each might not prove satisfactory: a few paragraphs could do little or no good. For information on these all-important subjects the reader is referred, in the appended bibliography, to standard works.

* * * * * *

During the past one hundred years greater changes have occurred in the material side of man's daily life than in the thousand or the five thousand years which preceded them.

From the dawn of civilization up to the year 1804 man, when he wished to go from one place to another, went on foot or rode on or drove behind horses: then came the steam-driven engine, and later, the automobile and the aëroplane. From the dawn of civilization up to the year 1802 man lighted his home or his public building with tapers fed by vegetable or animal oils: no variation, scarcely even an improvement in the traditional methods: since that time he has revolutionized lighting — first by gas and then by electricity.

From the dawn of civilization up to 1803 man wove his cloth upon hand looms: at that date the steam-driven loom was introduced, and the output was increased a thousand-fold. From the dawn of civilization up to 1836 man made a drawing when he wished to convey an impression of a person or a place: the invention of the camera has made it possible to record, in the twinkling of an eye, the likeness of material objects.

In the comparatively brief space of one hundred years man has developed ways of doing things which upset traditions handed down through countless generations from immemorial beginnings. We should not, therefore, be surprised at the artistic chaos in which we find ourselves, nor cry aloud that the times are out of joint: we must face the fact that we are in the first stages of a new era and plan to build anew to meet the irrevocably changed conditions.

Before the coming of the power-driven machine articles of daily use were made by hand. This was, naturally, a comparatively slow process. The craftsman, as a rule the designer of the things he made, producing slowly, had time to absorb the tradition of his craft. New decorative motifs made their way very gradually into the current of accepted forms which were handed down from one generation to the next. The maker, and his public, had time to weigh questions of color and form: and although unbeautiful and occasionally illogical articles were produced, at least they were produced singly.

But during the nineteenth century first one and then another article was produced by machinery. At the start these did not greatly differ in design from the current hand-made products. Then, with increasing rapidity, new forms were demanded and the designers, not prepared for the changed conditions, could not meet the demands. Less well designed articles were turned out: these lowered the public taste (a public becoming more and more hurried as conditions fostered a faster-moving life): the still less good was

tolerated; the machines ground these out, still further debasing the standards — and so the vicious interaction went circling lower and lower till, in the 'eighties, articles of daily use reached a level of ugliness never before known in the history of mankind.

In one of our great museums of art a little lady paused in a gallery where splendid rugs, glowing mosaics and other objects of beauty were displayed and asked one passing where the "Art Galleries" might be found. Upon inquiry it developed that she sought the rooms where paintings were shown. Paintings were, to her, Art — these other treasures were not.

Such a state of mind is not uncommon. Nor is it surprising when one considers the artistic quality of the objects used day by day by the average person since the middle of the last century. He is so used to unbeautiful streets, unbeautiful buildings and unbeautiful furnishings that the idea that city planning, architecture or the designing and making of clothing, furniture and utensils might come under the head of artistic activities has never occurred to him. Painting and sculpture — yes: these (he thinks) are ornamental frills and therefore Art — but those other things! They are just everyday necessities; in what possible way could artistic considerations of any kind apply to them?

This is the real problem which we must solve: how to bring to the average man a realization that there may be beauty in everything man (or the man-made machine) makes. Since, for the most part, our cities and all that they contain are ugly the unthinking suppose that this is preordained — the beautiful building or the graceful vase (should he recognize in them these qualities) are accidents.

Yet the business man has begun to realize that Art, curiously enough, can help him (although, misdoubting such manifestations, he refers to it as "Commercial Art" — clearly a contradiction in terms). Compare the advertising pages of a magazine of 1882 and 1922: the story is there for all to see. The automobiles which trundled along our

streets twenty years ago were ungainly when compared to those of today. While the makers are business men and not artists, the advance has been along the lines of fitness, or suitability — which is, in its degree, beauty.

Although we have but made a beginning, taste is improving — beauty is creeping into our daily life. We must, however, work patiently for many years before we can hope to find the average man thinking of anything save painting, sculpture and music in terms of artistic production, so long has he regarded buildings and their furnishings as necessities in which beauty has no part. A mediocre painting or a quite uninspired piece of sculpture shown in an exhibit is noticed in the newspapers: the well-designed wall-paper, the fine porcelain or the excellent advertising drawing receives no mention. The painters, almost exclusively, are referred to as artists: the forger of fine wrought-iron or the maker of beautiful furniture, if noticed at all, is not so designated. Education of the public (and of the newspapers which serve them) in a proper understanding of these matters must be our task: they must be led to realize that aesthetic enjoyment should be sought for in all kinds of artistic creations and that all who create them are equally artists.

An appreciation of the Arts founded only on reason can, at best, be but a pale pleasure. It is negative, not positive. Reason tells us that an object, to be beautiful, must not violate certain principles, yet gives us no assurance that beauty will result from a strict application of those principles. True beauty defies analysis — being of the spirit it soars above the grasp of intelligence: it may be felt, but not analyzed.

Nevertheless, the ground may be prepared for the growth of aesthetic appreciation of artistic products through knowledge of principles of design and processes of manufacture. In the following pages the various arts are briefly discussed that, as far as is possible in so small a space, the ground may be in part prepared.

In these discussions it is hoped that greater clarity has been obtained by investigating each art as a whole, regardless of nationality, rather than discussing, in turn, the entire artistic output of each country. There is, however, in this procedure a danger that the reader may gain the impression that these arts are interesting merely as mechanical processes rather than as spontaneous expressions of the needs and artistic impulses of the peoples who produced them.

The needs of man — although in modern times they appear to be without limit — are in reality few and more or less the same in all epochs and in every country. Man set his wits to work to supply his needs and the processes he evolved will repay careful study. But what is of greater importance is the artistic quality with which he endowed the work of his hands. This quality, as has been noted, defies analysis; its roots lie deep in some racial inheritance. The ancient Greeks, we know, were supremely sensitive to beauty of form; the races of Asia Minor remarkable for their superb color-sense — why, we cannot say. But it is this phase of these discussions — the social, the racial backgrounds — which should be kept in mind. The products of these craftworkers should be studied not as so many counters in a game of archaeology but as documents of the deepest human interest.

III. A DETAILED SURVEY

1. Ceramic Art

The art of the potter was developed independently by primitive races in many parts of the world. Clay, the chief ingredient of pottery, is widely distributed over the globe. Pre-historic man (possibly as early as 8000 B.C.) discovered that this material could be moulded when wet and upon drying would retain its shape.

Primitive man scooped out his vessel from a ball of clay; built it up, piece by piece; formed it of a coil built up spirally; or pressed the wet clay into rude moulds. The potter's wheel

was the greatest invention in the history of ceramics. Probably for ease of manipulation some pre-historic craftsman placed his clay on a loose slab of stone; discovered that he could turn this about and easily shape the spinning vessel — and the new era began. This discovery was made by many races quite independently. A disk of wood, spun by hand, became the accepted form and was used for ages. Then, in Egypt, probably at the beginning of the Christian era, it was found that the disk, or wheel, might be placed on top of a wooden rod and this attached to a second and larger disk below: by spinning the lower wheel with his foot the potter had both hands free for the shaping of the vessel which rested upon the upper wheel. In recent times mechanical methods of turning the wheel have been developed.

Forming a vessel on the potter's wheel is called "throwing." When the clay is soft enough to be thrown (or moulded) by the potter as the mass revolves upon the wheel it is difficult to obtain perfect smoothness of surface. If this is desired the piece is set aside to dry: when "leather-hard" it is again centred on the wheel and cut to an exact shape. Handles, bases and other adjuncts are modeled and joined to the vessel with "slip" (fluid clay) which, when the piece is fired, binds the parts together.

Pre-historic pottery was sun-dried: then came the knowledge that fire hardened the clay vessel and the kiln was developed. This was, and still is, a comparatively simple form of oven: an enclosed space for the objects to be fired, with a fire chamber below it. We have contemporary paintings of Egyptian and Greek kilns: a Roman example in a fair state of preservation has been unearthed in England.

All unglazed pottery is more or less porous. The early craftsmen, trying to overcome this difficulty, sometimes coated their vessels with waxy or resinous substances or with many coats of fine slip, highly polished. A great advance was made when it was discovered that a thin, glassy coating could be fired upon pottery, making it non-porous. This is

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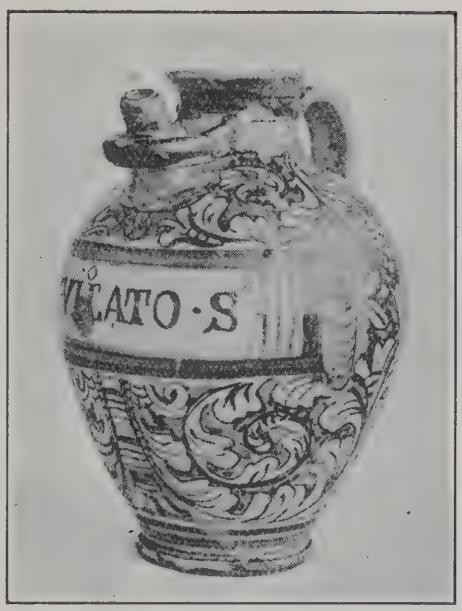

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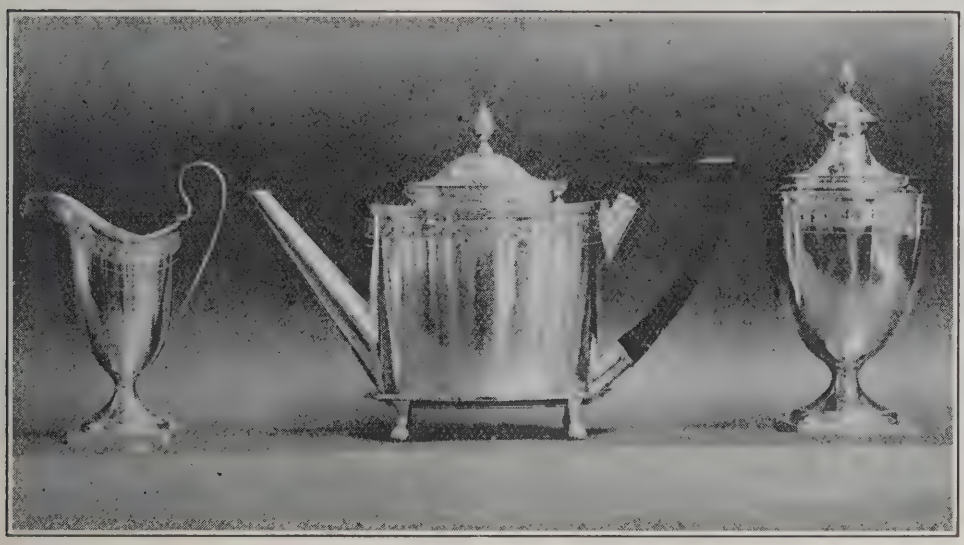

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1. A GREEK VASE. MUSEUM OF FINE ARTS. BOSTON
2. A MAJOLICA "DRUG–VASE," PENNSYLVANIA MUSEUM. PHILADELPHIA
3. A SILVER TEA-SET BY PAUL REVERE, MUSEUM OF FINE ARTS. BOSTON

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1. MODERN LEADED GLASS NICOLO D'ASCENZO, PHILADELPHIA
2. LEADED GLASS PANELS. THE CATHEDRAL, LE MANS. FRANCE

PLATE 124

called the "glaze." It is made from silica (which in the form of quartz makes the sands of the sea-shore) with various ingredients: it is, when applied, an opaque fluid but becomes hardened and transparent when fired. It may be clear, like ordinary glass, or be given color by the admixture of minerals or earths.

This process was discovered by the Egyptians or the races of Asia Minor possibly as early as 3000 B.C.: the Chinese at some unknown date made the same discovery.

"Stoneware" is made from clay mixed with sand or flint: is very hard and is glazed with a "salt glaze." When the kiln is very hot common salt is thrown in and its vapor forms a glaze upon the vessel. This lacks the smooth, vitreous surface of true glaze. "Tin-enameled" ware is made by coating the clay vessel with a slip containing oxide of tin: this gives the piece an opaque white surface. Over this a transparent glaze is fired.

Lustred pottery, an invention of the Moslems, has an iridescent film over its surface. This effect is produced by covering a glazed piece with a slip made of clay mixed with sulphide of silver or copper and exposing it, while being refired, to the vapors of wood fuel.

The "rice-grain" decoration of the Chinese (also used by the Moslems) is a form of enrichment which consists of cutting tiny perforations through the vessel before it is fired. When the piece is coated with glaze, these are filled by it and after the firing show as transparent designs in the non-transparent vessel: a subtle but effective mode of decoration.

The credit of producing porcelain must be given to the Chinese — perhaps the greatest potters the world has known. The name is derived from the Italian "porcellana," a cowry shell with a lustrous surface. The term "china" is a shortening of "China-ware" and is now applied to many varieties of clay vessels which are not porcelains. For porcelain is differentiated from other ceramics by having a trans-

lucent (or semi-transparent) body as well as a transparent glaze. By the tenth century A.D., the Chinese were making hard and brilliant glazes with feldspar (the crystalline element seen in granite): in the fourteenth century they found that by using kaolin, a pure white clay, mixed with feldspar for the body of the vessel, a new ware could be produced.

When these porcelains were introduced into Europe in the sixteenth century the potters, fascinated by their lightness and brilliancy, strove to imitate them. The first imitations resembled glass vessels rendered opaque by the introduction of clay: it was not until 1710, at Meissen, that true porcelain was made in Europe.

Decorations on ceramics may be modeled or painted, or both, and varied effects gained by the use of different colored clays and glazes. When "under-glaze" painting is used the glaze, when fired, causes the colors to blur very slightly, adding much to their charm. Over-glaze painting is frequently too sharp and precise. A mechanical method of decorating pottery — especially the many varieties of china-ware — is by "transfer-printing." The design is engraved upon copper and the engraved lines filled with the coloring matter. Paper is then pressed upon the plate and when it is removed the color remains upon the paper. This is then pressed upon the china and the color made permanent by firing. Much of our tableware is so decorated: these pieces are often cast instead of being formed on the wheel.

The pottery of Egypt and of the ancient peoples of Asia Minor cannot here be touched on. The ceramic art of Greece, however, calls for special mention, being treasured for the beauty of the forms and the charm of the decoration. The wonderful lustrous coating of this ware is so thin as to defy analysis: it is not, however, glaze. In the best period (fifth century B.C.) the vases are a deep tawny red: this shows in the figures and in parts of the ornament, the rest of the surface being covered with a gleaming black coating. The usual scheme of decoration shows panels filled with

mythological scenes or representations taken from daily life: the drawing is spirited and the composition superb. Compared with the wonderful porcelains of China or with the rich color and lustred glazes of Persian ceramics these pieces seem austere: they were, however, thoroughly in accord with the calm, reasoned architecture and the simple dress of the period.

Of the Moslem potters, those of Persia have left the finest wares. The luxurious courts of the rulers fostered the art and from the twelfth to the sixteenth century vessels were produced which for suitability of form to material and beauty and appropriateness of enrichment are surpassed or possibly equalled only by the Chinese products. Walls and domes were covered with lustred tiles: the Moors in Spain set the fashion for the Spaniards and in far-away Mexico the tile-covered cupolas are an inheritance from mediaeval Persia.

The overthrow of the power of Rome early in the fifth century A.D. left Europe in a chaotic state. The arts naturally suffered — ceramic art not least among them. Throughout the Dark Ages only the simplest wares were made: common pottery, rudely glazed. The first pottery of any note developed before the Moslem influence was felt was stoneware. Another ware, peculiarly Italian, is given the name "Graffito" (or scratched) from the method by which it is decorated. This pottery is made of clay which burns a dark red: it is covered with a "slip" of white clay and through this decorative motifs are scratched: the glaze is then applied.

The important European developments in ceramic art came through the attempted imitation of Moslem and then of Chinese ware. In Spain the Moors were producing magnificent pottery from the eighth through the fifteenth century: jars and platters from the Nearer Orient were carried into Europe and slowly a knowledge of Moslem methods spread among the potters.

The first notable European ware is the Majolica of Italy: distinctly Italian in form and decoration but based on the methods of the Moors. The name is derived from the Island of Majorca. It is supposed that pottery was not made there — merely that the ships carrying Spanish ware stopped at the island on the way to Italy. It is made of a buff clay covered with opaque white "tin-enamel." Before this is fired the decoration is painted on it. Since a touch of color once placed upon this slip cannot be changed it demands a bold and direct treatment: this gives to the decoration of Majolica a splendid vigor. Over the decorated slip a transparent glaze is fired. The making of this ware reached its highest development in the fifteenth and sixteenth centuries. (Pl. 123:2.)

A special development of tin-enameled ware is seen in the work of the great sculptor Luca della Robbia: the colored and glazed terra-cottas of Luca and his successors rank high in the field of sculpture.

Akin to the Italian Majolica in technical methods is the pottery first made at Delft, the name of this city later being given to all similar ware made in Holland. From the year 1600 to the end of the eighteenth century it was the most notable pottery of northern Europe. It was made as an imitation of the porcelains of China: it was, however, pottery covered with tin-enamel. The typical ware is blue and white: multicolored pieces were also produced. As has been noted, true porcelain was finally made in Europe in the eighteenth century. The works at Meissen, at St. Cloud and later at Sèvres should be mentioned: also the "Jasper-ware" of Wedgwood (1730–1795). The distinctive element in this consists of modeled decorations — often of tiny figures beautifully modeled by sculptors — cast in white clay and attached to a blue ground: other simple color combinations were also used.

The Chinese, from the earliest times, produced splendid pottery: their greatest achievements date from the four-

teenth to the seventeenth century when the art of making porcelain was at its height. (Pl. 121 : 2.)

2. Glass

The art of making glass is, compared with the art of the potter, a fairly recent development: as far as can yet be determined it was not practiced before 1600 B.C.

We do not know whether, when the Egyptians invaded Syria in that century, they taught the art of making glass vessels to the Syrians or were taught by them. The glass of this period is rich in color but it is never a clear white. The Egyptians decorated their vases with spirals of glass and practiced the art of cutting or engraving: they also made beads and mosaics of this material.

The Romans learned the art from the Egyptians, producing glassware which has but rarely been excelled. The range of color is great, the forms are beautiful and practically all the methods of decoration known to us were practiced by them. They made vessels of "Millefiori" ware: and the famous Portland Vase in the British Museum testifies to their high artistic skill in the manipulation of "Cameo glass." This vase shows figures of white upon a blue ground, parts of the outer coating of white glass having been cut away, leaving the figures in relief.

The making of glass mosaic was probably developed in Alexandria, Egypt, in the first century A.D.: particularly the art of backing the squares of glass with gold-leaf. The splendid mosaic decoration of the churches of southeastern Europe (as in San Marco, Venice) was a notable phase in the art of the glass-maker.

Glassware was made in Europe throughout the Middle Ages; gradually the Venetians took the lead as producers of the finest glass and since the fourteenth century have, to a great extent, kept the supremacy. They were the first to make mirrors of glass: as late as the sixteenth century, however, mirrors of metal were still in common use.

Glass is made from silica heated until it becomes fluid. Different ingredients are used to vary its character and metallic oxides used to color it.

In shaping a vessel the craftsman takes a "pontil" or blow-pipe and, gathering a ball of molten glass upon the end of it, blows a bubble of glass. This he may shape in a mould (rarely productive of the best artistic results) or may spin upon the "glass-maker's chair," a bench with two long arms along which he rolls the pontil, shaping the vessel with various instruments. If the pontil is held vertically with the bubble of hot glass uppermost the bulb becomes flattened and shallow — if the bubble is allowed to hang downward it becomes elongated. When the desired shape has been obtained the vessel is cut away from the pontil. While the glass is still hot ornamental knobs or threads of glass can easily be attached to it.

Window glass is now obtained by blowing a bubble of glass: drawing it out into a long cylinder, removing the rounded ends, splitting it lengthwise and flattening it out. Large sheets are made by pouring the molten glass upon an iron table and rolling it out to the desired thinness. Since this process leaves the glass somewhat rough, this rolled or cast glass must be polished on both sides. This method of manufacture was first used in France in 1688: in modern times sheets 27 x 13 feet have been produced.

Cast or pressed glass is made in moulds: the inner surface of the vessel as well as the outer being so shaped. The iron moulds roughen the glass: it is smoothed by being exposed to great heat immediately upon being taken from the mould. For this reason imitation cut-glass lacks the fine edges of the true product. "Cut-glass" is made from heavy glass blown in the usual way: the cutting is done with a small emery wheel.

In modern times this latter craft has been debased by much cutting of inartistic designs. Instead of using the cuttings to emphasize the form of the vessel by harmoniously

placed lines, criss-cross and zig-zag patterns unrelated to the form are used; instead of having but a little cut ornament the vessel is enriched so that the eye sees the ornament before it notes the form of the vessel as a whole. Finally, there is found now-a-days a great deal of realistic floral ornamentation entirely lacking in true decorative quality.

When glass was to be used for windows the bubble was cut open and spun before a hot fire: it suddenly "flashed" out into a flat disk having, in the centre, a thicker mass. This "crown," or portion which was attached to the pontil, was used for decorative purposes: panes of glass were cut from the disk. Only comparatively small panes could be so obtained. This fact, one may note in passing, has much to do with the character of our Colonial houses: the use of a single sheet of glass in a window-sash, so common in the 'nineties, injures the "scale" of a building.

Millefiori ("thousand flowers") glass is made by placing fine rods of glass side by side in the desired order and fusing them together by heat. Thin sections or "slices" are then cut from the mass, across the rods, and shaped into bowl or platter forms: the vessel showing over its surface the patterns formed by the ends of the colored rods. The fine twisted threads of opaque white glass often found in glassware are obtained by the same process. Rods of clear and opaque glass are fused together, the mass twisted and then drawn out into the desired shape.

Glass beads are made by wrapping threads of glass about heated copper rods: as the two materials cool the copper shrinks more than the glass and the beads slip from the wire. "Flashing" is the term applied to the process of overlaying one color with another. A ball of white is taken on the pontil: this is dipped into colored glass and the vessel formed. In such ware the outer coating is often engraved or in part cut away: the latter producing "cameo glass."

3. Leaded Glass Windows

The art of enriching windows with colored glass is first met with at the end of the tenth century A.D. The Romans seem to have been the pioneers in the practice of placing glass in window openings: but through the Dark Ages, in fact up to the thirteenth or fourteenth century, glass was too costly to be used extensively. The word window ("wind-eye") shows that in the formative period of our language such openings were unglazed and as late as 1516 Sir Thomas More, describing in the "Utopia" an imaginary island where conditions were ideal, wrote — "They keep the wind out of their windows with glass, for there it is much used."

It is natural that churches were first glorified with this new decorative art. They were the centres not only of mediaeval culture but also of popular interest and devotion. The development of this craft was rapid and by the thirteenth century every cathedral of Europe had windows ablaze with gorgeous, yet harmonious colored glass. The productions of that century have not been surpassed in beauty and in the proper use of material. (Pl. 124:2.)

As has already been noted a leaded glass window is composed of small pieces of glass held together by lines of lead and the fabric kept in a vertical position by being attached to iron bars which are fastened to the frame of the window.

The glass may be clear, stained on its surface or be colored throughout. This last is the material most extensively used and is called "pot metal" because the coloring matter is stirred into the glass when in a fluid state in the melting-pot. Yellow is obtained by covering clear glass with a solution of silver which when heated stains it that color. As such glass forms only a small part of the average window the use of the term "stained glass" for all windows of colored glass is incorrect. "Ruby" or red glass is usually made by "flashing," since if used in the form of pot-metal it is too dark to be effective.

When more than a geometrical pattern of color is desired

the glass must be painted to suggest human features, drapery, foliage and so forth. This is done with a dark brown paint which, when fired, becomes firmly attached to the glass. Patterns may be stained yellow on clear glass or, in flashed glass, engraved through the surface coat so that the white will show.

Transparent enamel paint can be fired on glass. This method was not introduced until the sixteenth century and is suited only to small windows which are to be seen at close range.

In making a modern window a small sketch, in color, is first prepared. From this a full-size "cartoon" is drawn in black and white, great care being taken with the lead lines that they may form a pleasing pattern. On this cartoon all painted details are indicated. Two outline drawings are made from this, each bit of glass being given the same number on the two drawings. One of these is cut up and used as a guide in cutting the different pieces of glass which are then laid, according to number, upon the uncut drawing. Where details are required they are painted on the glass and burned in. The window is then ready for leading.

The strips of lead which bind the pieces of glass together look, in cross-section, like the letter H, the width varying from $\frac{3}{16}$ to $\frac{3}{4}$ of an inch. The strips are cut to fit around the pieces of glass and soldered where they meet one another. Cement is rubbed into the crevices between the glass and the lead. To the lead lines are soldered the bits of wire by which the fabric is attached to the supporting iron bars.

Questions concerning the designing of leaded glass windows have been discussed: these should be re-read.

4. Textiles

Among the remains of dwellings of the Stone Age bits of woven material have been found; the art of weaving is of an undatable antiquity.

The early fabrics were, of course, crude: but the dawn of

history finds many races weaving decorative fabrics. Chinese records state that more than two thousand years B.C. silk was woven and it is known that in 300 B.C. the Chinese were weaving complicated patterns as fine and as elaborate as any made today. The Egyptians practiced tapestry weaving as early as 1600 B.C.: the Incas of Peru used the same method in producing ornamental textiles centuries before the Spanish conquest (1533 A.D.).

Textile products (with the exception of lace) have one feature in common; all are formed on a *warp* or set of parallel threads stretched close together in a loom. In the majority of fabrics this warp is of one color.

With the exception of tapestries all warp textiles are made with a second set of threads, the *weft*, woven across the full width of the cloth, crossing the warp threads at right angles.

In the simplest warp fabric there is, of course, no woven ornament; the warp and weft threads crossing each other at regular intervals. The mechanism which is used for weaving such cloth is simple. The warp threads are stretched in a loom from one cylinder (the warp beam) upon which they have been wound to another upon which the finished product is to be wound (the cloth beam). These threads are passed through tiny eyelets attached to bars or frames called headles: the even number threads going through the eyelets of one headle, the odd-number threads through the others. When one headle is lifted alternate threads rise with it leaving a triangular space called the "shed" between this and the other group of warp threads. Through this space the shuttle (usually a cigar-shaped instrument upon which the weft threads are wound) is thrown, leaving a thread between the upper and lower strands of warp. Then the first headle is lowered and the second lifted: the shuttle is thrown back — the weft thread passing over those warp threads which in its previous journey it had passed under. Thus a continuous over and under interlacing of the threads is obtained.

In a fabric so made the weft threads must be pressed

together to give a firm texture. Between the cloth beam and the headles there is hung a "Weaver's Reed." This consists of strips of flattened wire placed in a wooden frame, the device being hung from the upper part of the loom. Every warp thread passes through the reed. When the shuttle carrying the weft has been thrown from one side of the loom to the other the reed is swung forward to push the weft thread firmly into place; is swung back to allow the thread to be laid in the opposite direction and then beats that up against the first.

When patterns are to be woven the warp threads are not drawn through the eyelets in the headles in the simple alternating manner described above.

Suppose that headle No. 1 carries two neighboring threads, skips the next, carries the next two, and so on — headle No. 2 carrying every third strand. As the headles are raised and lowered and the shuttle passes back and forth a simple pattern is obtained, two over and one under: and we have the beginning of design. By increasing the number of headles (as many as twenty-four are used) the arrangement of the warp threads can be varied according to some definite plan and patterns produced which may raise weaving to the plane of the Arts.

One of the simplest of the weaves by which fabrics having artistic interest are produced is that called damask. Here the pattern on one side, given by the warp threads, is reproduced on the other by the weft threads. This method of weaving originated in China. The knowledge slowly spread westward and in the twelfth century A.D. the city of Damascus became so famous for such fabrics that the name of the city was given to all textiles produced in this manner. It is most familiar to us in table linen but it may be variegated in color and brocaded.

The name "figured fabrics" is given to woven textiles where the design on the right side is not reproduced on the back. The system of threading the warp threads through the

eyelets of the various headles does not differ in principle from that used in weaving damasks: the weft threads vary in color according to a definite plan. The art of weaving such fabrics also originated in China: no existing European piece can be dated earlier than the eighth century A.D.

Up to the eighteenth century the raising and lowering of the various groups of warp threads necessary in figured fabrics was done by hand in a "draw loom." In 1728 the first mechanical device for controlling the warp was introduced: this was, in 1804, finally perfected by Jacquard, a Frenchman, whose name is now given to all such looms.

The mechanism is complicated. An endless chain of cards, perforated according to the design desired, passes, card by card, over a series of little movable pegs (set in a frame) to each of which is attached an eyelet through which passes one of the warp threads. Certain pegs are depressed by each card, there being no holes above them: the warp threads attached to these are not lifted — the others are, and a "shed" is formed through which the shuttle passes. As there are as many as 1200 of these pegs in some Jacquard looms the most complicated patterns may be woven.

The art of brocading textiles — that is, enriching a warp and weft fabric with ornament woven with a second set of weft threads — is said to have been practiced in China as early as A.D. 238. From China this method was carried westward: in the eleventh century the weavers of Asia Minor were producing splendid gold-brocaded fabrics which were in great demand in the European market. The craftsmen of Europe learned the art from the Moslems and by the fourteenth century the weaving of brocades had become a well-established industry. Italy easily led in the beauty and variety of her productions until in the seventeenth century the French weavers, under the patronage of Louis XIV, began to set the fashions for Europe.

Brocaded designs are woven with a shuttle at the same time that the main fabric is woven, but do not constitute

a part of the main fabric. Any kind of a warp and weft textile may be brocaded. The difference between a brocaded and a figured fabric is this: in the latter the weft threads rarely skip more than eight warp threads (a distance of perhaps one-eighth of an inch) whereas the weft threads used for the brocading may skip the warp for a distance of several inches — always on the back of the fabric. If these "floated" or "broached" threads are unattached for only a short distance, nothing is done about them: if the space skipped is several inches across they are cut away when the piece is completed. Brocades are now made on the Jacquard loom, as is, in fact, every kind of textile, including lace.

The term "piled fabric" is given to any textile which has a surface composed of threads projecting at right angles to the warp. Oriental rugs, modern carpets, Turkish towels and velvets are all included: yet the method of producing the first is entirely different from that used for the last three where the processes are somewhat similar.

When velvet was first woven is not known. The name is derived from the Italian "velutto," meaning shaggy. It is of Oriental origin: the earliest mention of it occurs in the fourteenth century. The cities of Italy became famous for the beauty of the velvets which they produced: in the sixteenth century Bruges succeeded in establishing herself as a formidable rival of the Italian towns in the weaving of these much-prized fabrics.

Velvet differs from the textiles discussed above in this: it has two (or more) sets of warp threads, one of which forms the backing, or ground of the fabric — the other, of silk, forms the loops on the surface. These may be left as loops or may be cut, producing a brush-like surface.

These loops are formed over wires which extend the width of the fabric. A wire is placed in the "shed" parallel to and above a weft thread. The proper headle is then dropped, bringing the silk warp down over the wire — the next weft thread carried by the shuttle binds it into place. The result

is a wire temporarily woven into the fabric, above the ground warp and weft, over which the silk warp is looped. This process is repeated: after a few wires are in place, the one first used is withdrawn and again inserted, in front of the others.

These wires are of three kinds. A plain wire leaves loops when it is withdrawn: the resulting fabric is called uncut, or terry, velvet. If a small blade is attached to the end of the wire it will cut the loops as the wire is withdrawn: the cut loops then form the upstanding surface of ordinary velvet. In the third type the wire is slightly flattened and has a groove along the upper surface. With a knife the weaver cuts some of the loops, the knife being guided by the groove: thus patterns may be formed with a combination of cut and uncut loops.

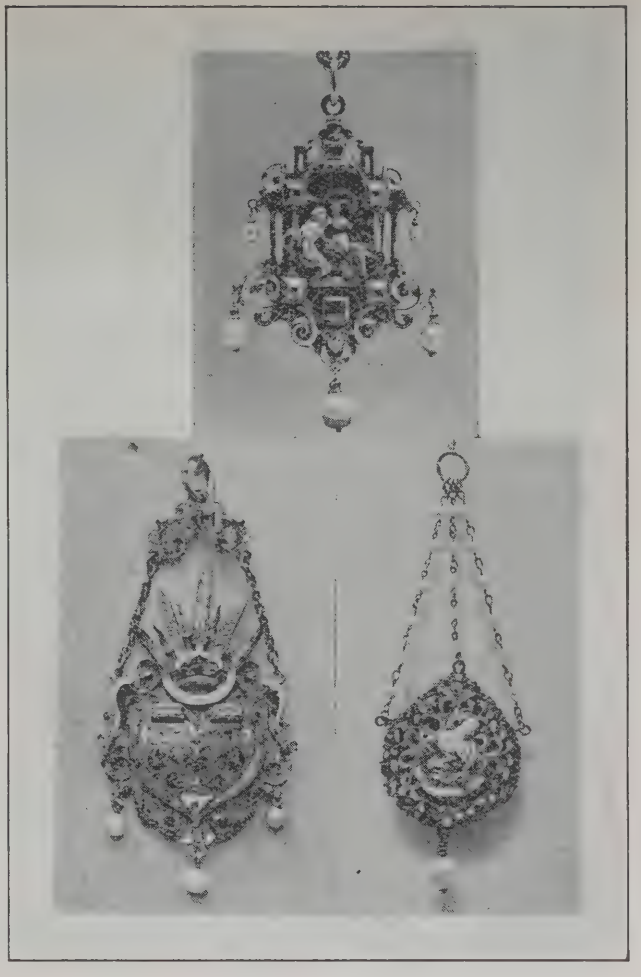
In elaborate figured velvets the loops cover only certain portions of the fabric: these may be cut in places to give still further diversity of texture. Gold weft is often introduced, producing the most sumptuous of all textiles. (Pl. 125: 1.)

Modern velvet is woven on the Jacquard loom and various ingenious methods of producing piled fabrics (plush, carpeting, etc.) have been perfected.

Fabrics woven in the special manner called tapestry weaving have been made by many races from early times. The peoples of Egypt and China, Greece and Ancient Italy, North and South America (before their discovery by Europeans) produced tapestries. The great age of tapestry weaving, however, began in Europe in the twelfth century and reached its height in the fifteenth. The productions of the Flemish artists of this period are unsurpassed. (Pl. 126.)

Tapestry differs from any other warp fabrics in that there is no continuous weft extending across the warp. The weft threads are interwoven with the warp for short distances only: thus there can be a change of color at any point. Small bobbins are wound with the colored weft; these the

PERSIAN VELVET, XVII CENTURY
PENNSYLVANIA MUSEUM, PHILADELPHIA



ITALIAN JEWELRY. XVII CENTURY
METROPOLITAN MUSEUM OF ART, NEW YORK

FLEMISH TAPESTRY, XV CENTURY CROSSING THE RED SEA. MUSEUM OF FINE ARTS. BOSTON

artist weaves in and out between the heavy warp threads, dropping one bobbin and weaving with another as the changes of color are called for in the design. As the weft threads are woven they are pressed firmly together with a comb-like implement.

The weaver faces the back of the tapestry as he works. The design may be roughly sketched on the warp threads: the more usual practice is to have a "cartoon" or drawing placed in front of the weaver but separated from him by the warp through which he looks as he builds up the fabric.

Since the warp threads are comparatively thick and the weft threads fine, a ridged surface is found in all tapestries. Should these ridges run vertically the effect would be unpleasant. This makes it necessary for the weaver to work from one side of the tapestry across to the other, not from bottom to top. Thus figures which in the completed fabric will be upright will, in the uncompleted tapestry, appear in a horizontal position.

The method by which a tapestry is woven suggests that the color of the weft threads be frequently changed. If a large field of one color is used much labor is expended to gain an uninteresting result: the same amount of labor would produce effective patterns were many colors used. For this reason tapestry weavers in the great period used designs where every part of the fabric was broken up into small patches of colors: the costumes covered with patterns and variegated with masses of light and shade: the foliage and landscapes filled with detail. These tapestries are interesting in every part.

With the growth of naturalism in the seventeenth and eighteenth centuries the makers of tapestries began to reproduce the broad masses of color and the classic grace of line found in the paintings of the period. But forms and colors which closely follow nature, though effective in paint, are not suited to woven materials. One cannot satisfactorily reproduce in a tapestry details of classic architecture or

the large sweep of classic costume: stretches of unbroken sky are, in a tapestry, uninteresting and realistic landscape ineffective.

Machine-made "tapestries" are produced in the manner of figured fabrics: the less said about them the better.

Oriental rugs differ from all other textiles in the manner in which the patterns are produced. Although weft threads are used to strengthen the fabric they play no part in the design. This is obtained by the loose ends of small knots which are tied to the warp threads. This form of weaving was developed in Asia Minor perhaps as early as the eleventh century A.D.: the finest specimens are the Persian carpets of the fifteenth to the seventeenth century.

When the warp threads are in place short lengths of wool (or other fabric) are knotted on to each of the warp threads so that the ends of the knot project in front. When knots have been tied across the width of the warp, a weft thread is run in — then another line of knots and another of weft, and so on. These rows of knots and weft are, as they are made, pressed close together by a comb. Finally the projecting ends of the knots are carefully clipped to an even surface.

By this extremely simple method the wandering tribes of Asia Minor and later the peoples of India and China produced magnificent works of art. Hereditary and instinctive taste in the matter of design and color, ample time and great patience were all needed. The lack of the last two, at least, has prevented any of the Western nations from developing the art. It is said that in the East conditions are rapidly changing and that, like engravings, hand-tied rugs will soon be things of the past.

The machine-made imitation is woven as velvet is woven: but hand-made rugs cannot be imitated. The irregularities in design, the charming variations in color, give Oriental rugs a quality which can never be reproduced by a machine. It is unfortunate that the attempt to imitate them has been

made: the products of the machine should be restricted to those forms which are suited to it.

Printed embellishment upon textiles was first produced by means of wood-blocks; the design to be printed being left upon the surface of the block by the simple process of cutting away the background to the depth of a quarter of an inch or so. The surface of the block was then inked with a roller and pressed upon the cloth; a separate block being cut for each desired color. In this manner some of the most interesting of the Eastern textiles were (and still are) produced. The process was also developed in Europe, being used for the printing of wall-paper as well as of linens and chintzes. The next step was the printing from engraved copper plates; finally the engraved roller was introduced. In this process a copper or steel coated cylinder, the width of the cloth, is engraved with the desired design, the "repeat" of the pattern being determined, of course, by the circumference of the cylinder. The number of cylinders used corresponds to the number of colors in the design. By this method splendid effects are obtained in chintzes, cretonnes and printed silks. The printing of wall-paper does not differ, in essentials, from the process described above.

5. Lace

The first examples of lace may date back to the thirteenth century: in the fifteenth century, however, the fabric was still nothing more than threads or cords braided together to form a decorative pattern. These laced cords were first woven on the fingers of one hand: then the weaver braided a large number of threads upon the upheld fingers of an assistant. The next step was to employ inanimate uprights upon which to weave the fabric and pillow-and-bobbin lace came into being, probably in Italy in the sixteenth century.

The pattern is first drawn upon a strip of paper; this is laid upon a pillow and pins are stuck in at the desired points. The threads, wound upon bobbins, are woven in and out

amongst the pins: unlike needle-point lace, the completed design appears as the fabric is woven.

The earliest pillow lace was simple and rectangular in design: as the art advanced designs of truly marvellous intricacy and beauty were produced. Italy and Flanders at first led in the making of fine lace: under the patronage of Louis XIV France at length succeeded in establishing at least a successful rivalry with those countries.

Needle-point lace might be termed embroidery which lacks a ground. Its development closely parallels that of pillow lace. The design is drawn upon vellum which is attached to two pieces of linen. Cords are laid along the main lines of the design and sewn to the vellum and linen. These cords and the spaces between them are then enriched with needlework: when the fabric is completed a knife is passed between the pieces of linen and the lace freed from the temporary background. Some of the products of this art, particularly those of Venice, are of astonishing richness.

Modern ingenuity produces with the Jacquard loom lace which closely resembles the hand-made products; it lacks, however, the charm of irregularity (not the conscious and studied irregularity affected, to the detriment of their work, by some modern craftsmen -- but the subtle variations which come when the creative artist is working with care-free rapture).

"Darned lace" is embroidery upon net: it is often used, particularly in the sixteenth and seventeenth century work of Italy, in connection with cut-work or designs produced by cutting patterns in linen, the edges of the opening being bound with needlework.

6. Embroidery

As needles are found among the remains of the lake dwellings of Switzerland (8000 B.C.) it may be supposed that the ornamenting of textiles by means of embroidery is almost as old as weaving. The earliest pieces which can be dated, how-

ever, are from tombs of Egyptian rulers of the sixteenth century B.C. The art was practiced by all races. The peplos or robe carried in the Panathenaic procession — a representation of which may be seen in the frieze of the Parthenon — was so enriched. Attalus II, King of Pergamum (159–138 B.C.) is said by Pliny to have invented the art of embroidering with gold threads. Perhaps the most famous example of the craft is the Bayeux "Tapestry": a band of linen more than 230 feet long embroidered with the story of the conquest of England by William of Normandy, executed shortly after the event — the chief treasure of the city from which it takes its name. In this work the needle of the artist (due consideration being taken of the time of the production) rivals the brush of Giotto or the pen of Froissart. The "Tapestry" is a work of art as well as an historic document of great value.

7. Jewelry

From the earliest times man has shown a fondness for ornamenting his person with bright feathers or gaily-colored shells and stones.

In this connection the query might be raised as to whether absence of ornament from the person of the male is a sign of an advanced civilization. In the best periods of the civilizations of Greece and Rome and in the present era jewelry is noticeably absent from the dress of men. Its absence in modern times is understandable when man's raiment is considered — the stiff, formal lines and dull surfaces of sack coat, derby hat or evening dress are in no way adapted to enrichment by delicately wrought, sparkling ornament. The great personages of Egypt — the richly robed kings and nobles of Mediaeval and Renaissance times outshone their womenkind in the matter of jewels: what conclusions are to be drawn from this? That there is an intimate connection between jewelry and dress may be deduced. Why, one should then inquire, is the clothing of the modern man dull

and formal and is this sober, unbeautiful garb a sign of advancing civilization? Such inquiries would lead us far afield.

In the making of jewelry there are no complicated processes which call for elucidation. The metal is beaten or rolled into thin plates and wires — these are cut to the required shapes and soldered together. Gold has at all times been the favorite metal and precious stones (which term includes pearls) and bright enamels used for its enrichment.

When, now-a-days, we speak of "jewelry" the use of one or more precious stones is almost taken for granted. Greek jewelry, however, is in the majority of cases of gold only: the Egyptians used enamels to a great extent: in Roman work the use of cut stones becomes more prevalent. It is not until we reach the period of the Renaissance that the jewels themselves become as important in the design as the metal which holds them. In modern times the expert cutting of precious stones has greatly increased their brilliance and the unfortunate tendency has been to sacrifice the beauty of the setting to obtain a mere glittering mass of stones.

A piece of jewelry, to deserve the name, must have in it the elements of design. A large diamond held by almost invisible claws and attached to a scarcely perceptible ring of metal is not, from the artistic point of view, a piece of jewelry: a large pearl fastened, in some unseen way, to the lobe of the ear lacks, as an ornament, the structural quality which the logical mind demands of all man-made things. In jewelry quite as much as in architecture or in music reasoned structure is a *sine qua non*. A pendant is not well designed if it could, without its chain, be used equally well as a brooch. A brooch whose design calls for a small pendant ornament must be so designed that were it removed the piece would look unfinished: the removed part should proclaim itself the part of a whole as does a fragment of a Wagner opera when played alone.

The designing of jewelry is not, alas, usually regarded from this point of view: our taste has been warped in this as in

so many of the minor fine arts. The art has been further debased by the recent excessive use of platinum in much of the more expensive work. This material, beautiful when used with gold, is seldom beautiful by itself: furthermore, since forms of extreme delicacy can be wrought from it, the skilled craftsmen, intent on mere display of skill, have devised pieces which lack structural "backbone": they are but flat, filmy webs of metal set (usually) with diamonds. In jewelry one wishes delicacy — the lack of which is the great fault of much of the amateur jeweller's work — but one also wishes a certain sturdiness and vigor of design. The majority of the platinum pieces show aimless criss-crossings of lines and curves and lack the "third dimension" — the depth of the piece from front to back — a characteristic beauty of nearly all Renaissance jewelry. (Pl. 125: 2.)

Jewelry is as intimately associated with the cultural development of mankind as is architecture — it plays a large part in romance as well as in history. The scarab seal of the Egyptian king: the ring of prince or priest — the wedding ring which, in Roman times, was merely the visible sign of a business contract: the massive rings worn by the Roman dandy in the winter season which, in summer, were laid aside that rings of more delicate workmanship might be worn; the diadem and the crown: the chain of office, the insignia of rank; volumes might be written concerning the romance embodied in the jewelry of the past: also other volumes (chapters, at least) concerning some of the present-day survivals — although it would take the pen of Carlyle to do them justice.

That jewelry is merely a part of costume has been suggested: lack of taste is often shown when this fact is disregarded. Lustrous pearls are unsuited to a cotton gown: they need as a background, filmy, shimmering textures. A diamond solitaire on a hand with untended fingernails seems out of place: semi-barbaric jewelry rarely harmonizes with the dress of the modern woman. This brings up another point —

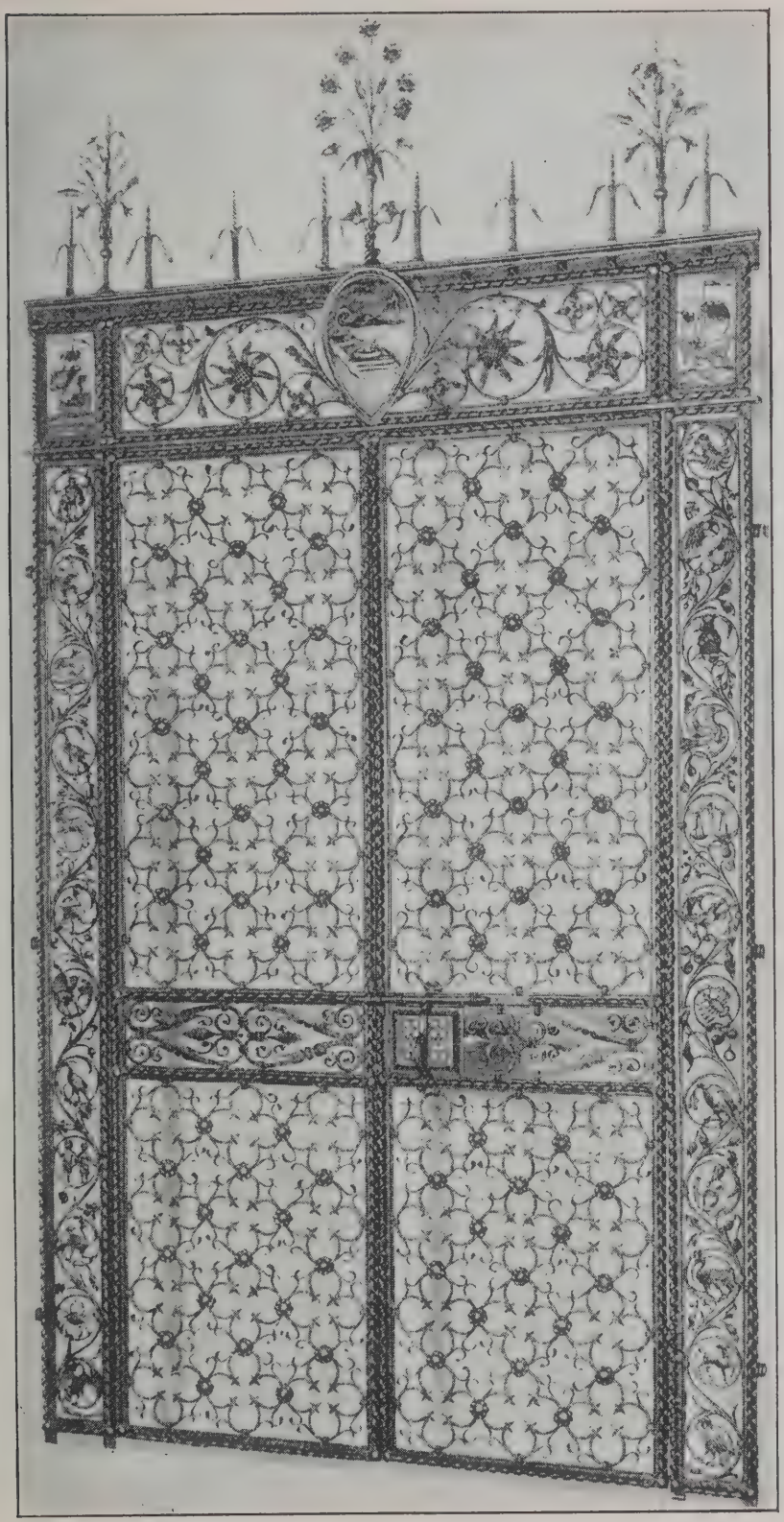
which is that in the products of unselfconscious races jewelry and dress are suited to the color of the skin of those who wear them, just as dress is a logical outcome of climatic conditions. Concerning costume and the fluctuations of style in dress the philosopher as well as the philotechnic might have much to say.

8. Metal Work

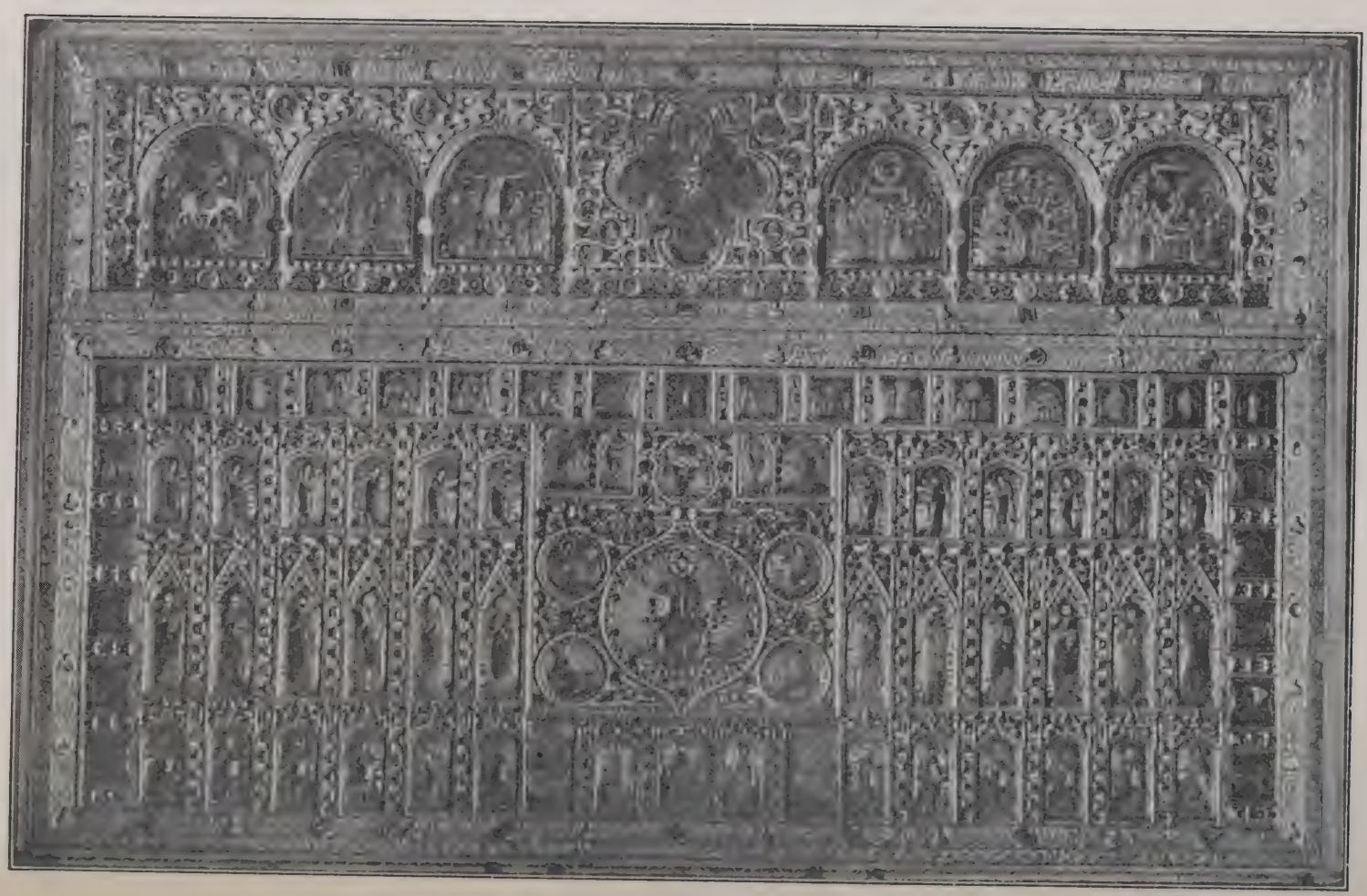
So important in the history of civilization is the use of metals that the archaeologist classifies man according to the Stone Age, the Age of Bronze or of Iron. The use of bronze (an alloy of copper and tin) seemingly preceded that of iron: through both of these Ages gold was used: silver was comparatively rare in prehistoric times.

Metal forms may be classified according to the method of production: wrought or cast. Forgers of wrought iron have given (and still give) us works of great beauty: the screens of many Gothic and Renaissance cathedrals, for instance, are splendid in design and show a clear understanding of the relation of form to material. The better silverware, even of the present day, is wrought. In making a bowl, or other vessel, a sheet of silver is beaten into the desired shape, the silversmith turning the sheet this way and that, as he hammers it, on curved iron forms. The hammer marks, at first very conspicuous, are by degrees hammered out — in the finished piece they are visible, if at all, only on the inside. The amateur craftsman, lacking skill, frequently exhibits articles in which the hammer marks are visible: such a surface is, unfortunately, admired by many since it shows that the piece is "hand-made." The crowning touch, however, is found in machine-made tableware — urns or spoons stamped out by machinery — showing hammer marks over their surfaces. Surely the illogical modern fondness for imitation could go no further.

Enriching metal by hammering out ornaments upon its surface (*repoussé* work) is one of the methods of the ancients



WROUGHT IRON GRILLE, Samuel Yellin
THE DETROIT PUBLIC LIBRARY, Cass Gilbert



THE PALA D'ORO, SAN MARCO, VENICE. XII TO XIV CENTURIES

still in use. A thin sheet of metal is placed on a bed of pitch and the designs beaten into relief, the pitch yielding to the pressure and yet protecting the metal from being pierced by the tools. The pitch is then melted away from the front of the relief and applied to the back and the embossed surface finished with the graver.

In casting metals a mould is used: for this purpose a model of the object desired must be made — from this the mould is obtained. When the object is solid there are no difficulties to be overcome. Only comparatively small pieces can be so cast: for larger work a temporary "core" is almost essential (in a life-size bronze figure, for instance). This is usually of clay and is removed when the piece is completed. It is probable that the Greeks and Romans used the process now called *à cire perdue*, so brilliantly described by Cellini. A rough core of clay is made, from a sixteenth to a quarter of an inch smaller in all dimensions than the desired piece. Wax is then placed over this and the model completed in all its details. Next an outer casing of clay is formed about the model (the core being attached, through the wax, to this casing by occasional small rods of whatever metal is to be used for casting) and the whole is then slowly heated. This hardens the clay and the wax coating is melted out (*cire perdue;* "lost wax"). Molten metal is poured into the space formerly occupied by the wax and when this has cooled the outer casing and the core are removed and the surface of the piece freed from any imperfections.

Metal is enriched by the inlaying of other metals, often called "damascening" (from Damascus, where such work was skilfully done). The design is deeply engraved in the metal and a wire (of another metal) hammered into the grooves, the surface being then smoothed and polished. Enamel is also used upon metal, three distinct processes being employed. In *cloisonné* work the surface of the object to be enriched is covered with tiny upstanding strips of metal (*cloison;* "fence") soldered on: the spaces are then

filled with enamel (an opaque glassy substance, applied while in a fluid state) and the piece fired. *Champlevé* enamel is made by sinking in the metal the desired pattern: then filling these hollowed-out spaces with enamel. This method permits of the enameling of only parts of the surface: with *cloisonné* the entire surface is usually covered. In this latter work the Chinese and Japanese productions are particularly notable. The third chief division is that made famous by the enamelers of Limoges in the sixteenth century. The process might be termed painting in fluid glass: the entire surface of the metal is covered with colored enamel, pictorial effects being the aim of the artist.

This last division should not, in truth, be given under the general head of metal-work. Even the first two are not generally regarded as the ornamenting of metal; that material is, in many cases, merely the groundwork for the enamel. Yet in such a wonderful example of the metal-workers' art as the famous Pala D'oro, or golden altar frontal, of St. Mark's, Venice (Pl. 128), *cloisonné* enamel is used as well as ornaments which were cast and others enriched with *repoussé* designs. In the description of the furnishings of the temple built by Solomon there is frequent mention of "gold fitted upon the carved work" — a form of *repoussé:* Homer's description of the Shield of Achilles shows that the writer was familiar with wrought metals. The enameled gold robes of the "Zeus" of Phidias possibly surpassed anything executed before or since.

Space does not permit description of the various remarkable works in bronze of the Greeks and Romans and of the artists of the Renaissance, particularly in Italy: of the interesting mediaeval work in copper or lead or the many other forms of beauty wrought by workers in metal. (Pl. 127.)

9. Furniture

The complex nature of our present-day civilization seems to demand many articles of furniture; peoples who have led

or lead simpler lives live with very little. Even now many Japanese houses of the well-to-do contain but chests for clothing and low stands to hold dishes at meal-times: no chairs, no bedsteads, no desks, no bookcases. In ancient Egypt tables, chairs and simple bedsteads were the only pieces of furniture; such were the articles used in Europe down to the time of the Renaissance. The invention of printing multiplied books, and soon furniture was being devised for these: with the gradual disappearance of almost daily warfare smaller objects of household use began to accumulate and cabinets and sideboards for their display were needed. Clothing became formal in cut and must be suspended in wardrobes instead of being laid away in chests: writing became a commonplace necessity and not the accomplishment of the priest and the bureau or desk was developed. (It should be noted, in passing, that "bureau" is derived from the French *bure*, a woolen cloth used to cover a desk — the modern American transference of the term to a chest of drawers with a looking-glass fastened above is quite indefensible.) Instead of the mediaeval trestle-table — a plank placed upon trestles and therefore easily moved — came the "framed table," followed by tables of differing form for every conceivable use. The stiff settle or bench was succeeded by the sofa — the simple chair by the arm-chair and then the rocking-chair (which it is to be feared, is an American invention) and the wretched piece known as the "stationary rocker" — beyond which it is surely impossible for tastelessness to go. In modern times the multiplicity of the pieces has merely increased the opportunities for making ugly things. A better day, however, is at hand: the average taste in furniture (in spite of the "golden-oak" phase) is gradually improving.

Wood has naturally been the favorite material in furniture-making, although marble, ivory and metal are also employed: the last in an unusual degree by the Greeks and Romans. Upholstered chairs did not appear until the seventeenth cen-

tury. Here again the present day designer goes beyond all reasonable bounds with his "over-stuffed" pieces (actually a trade term) where all sense of structure is lost.

The ancients often overlaid chairs and tables with plates of gold: inlay of metals and of colored woods has been universally practiced. In the luxurious court of Louis XIV the cabinet-maker Boulle developed sumptuous pieces inlaid with brass and tortoise-shell and mounted with ormolu (cast bronze, chased and gilded). Of the work of Chippendale and the English school, as well as of many other matters concerning this most interesting branch of art space will not permit mention.

10. The Book

Our word "paper" perpetuates the fact that the papyrus of the Egyptians was, for centuries, the material upon which men wrote. It was made from the pith of the plant of the same name. Paper, as we know it, was an invention of the Chinese: it was first introduced into Europe, by way of Asia Minor, in the twelfth century. Egypt had a practical monopoly on papyrus; to offset this, parchment, or the prepared skins of animals, was developed at Pergamum, in Asia Minor, in the second century before Christ, the name being derived from that city.

In the ancient world writings were inscribed on but one side of the material which was rolled into a "volumen" — whence our word "volume." This was inconvenient, since a "volumen" was rolled up as it was read so that the first part of the document was at the centre of the roll and must be rewound before it could again be used. (Luxurious Romans actually had slaves whose only duty was to rewind the rolls.) As parchment came into general use it was found that both sides could be written upon: this called for a new method of arranging the material. The obvious proceeding was to fold the skins and to bind them together and the *codex* came into being: the forerunner of our book, whose name, however, is

of Teutonic origin. The "volumen," the traditional form, was but slowly replaced by the *codex* — particularly as the latter had been adopted by the Christians: with the vanishing of the ancient civilization the older form disappeared.

Mediaeval manuscripts with their rich initial letters and illuminations in color and gold, are the joy of the lover of beautiful handiwork. The art, however, is almost a lost one: printing from movable type closed that chapter of man's productivity.

The invention of printing is attributed by some to Gutenberg, by others, to Coster — the date of this greatest of all inventions is, as nearly as can be ascertained, 1446. Inscriptions cut in reverse upon wood and printed upon paper seem to have been issued in the previous century: but the invention of movable type threw wide the gates of knowledge.

The earliest books were printed from type which imitated the current "Gothic" letter used by the manuscribers. In 1464 appeared the "Roman" letters, which, on account of their greater legibility, have become the accepted type. The early books were, as a rule, beautiful in form; as printed books gradually ceased to be novelties less attention was paid to type and make-up and in the nineteenth century bookmaking, as an art, was almost lost sight of. As in other matters there has been, in recent years, a revival of interest in the production of beautiful books: by which is meant not books with good illustrations or effective covers but volumes where paper, type, margins and all the other details have been considered from the point of view of the highest possible achievement.

II. Illustration

To illustrate means to make clear (from *lustrare*, to light up). Picture-writing was man's first method of communication other than verbal: all races have developed the art as far as their genius permitted. The Egyptians added drawings to their texts: it is evident that the Romans, at least, had

illustrated manuscripts, though the earliest existing fragments date only from the third century A.D. Illustrations (generally termed miniatures) were common in mediaeval manuscripts: the art took on new life with the introduction of the wood-cut and the engraving. These printed pictures (which first appeared in the fifteenth century) permitting almost indefinite reduplication, took the place of the painted pictures of the older manuscripts, which could not — at that time — be reproduced. For four hundred years there was no further development: then between 1830 and 1840, Niepce and Daguerre discovered the art since known as photography and a new form of illustration came into being. At first only original photographs could be used: this was clumsy as well as expensive. The publishing world therefore sought mechanical means of reproducing drawings, paintings and photographs. One essential was that the plate from which the illustration was to be printed should receive the ink on its surface and therefore print from the surface — should the ink be held in lines cut *below* the surface (as in copper-plate engravings) the plate could not be used with type, which prints from the surface.

The simplest form of mechanical reproduction is that known as the zinc-plate process, by which lines, dots or solids may be reproduced, but not the gradations of tone found in photographs or paintings. A photographic plate of any desired size is made of the drawing: this is placed upon a sensitized metal plate and the print made upon the metal. The lines (or flat masses) of the drawing thus reproduced upon the plate are hardened and the rest of the surface eaten away with acid. When a print is made from such a plate only the lines or masses on the surface receive the ink: the resulting print is a perfect copy of the original. If color is desired a separate plate must be made for each color: there can be no gradations — from an orange-red to a red-violet, for instance.

The need of a process which should reproduce tones from a surface plate was finally met by the invention of the "half-

tone" process, made practical in 1882. The basic idea is simple. A tone, grading from light to dark, is broken up into a net-work of fine dots: these are large in the dark parts and small in the lighter portions of the picture. (A magnifying glass will show these dots in the illustrations used in this book.)

To break up the surface into the dots a photographic plate of the original picture is printed upon a sensitized plate, but through a "screen." This consists of two sheets of glass, each ruled with a set of diagonal lines (the number ranging from fifty to three hundred lines to an inch). The sensitized plate records only the parts of the photograph which show in the tiny spaces between the hair-like line of the screen. The great drawback to this process is that it greys the picture, absolute white being unobtainable (unless the plate be afterwards engraved).

Photogravure is a direct method of reproducing a photograph: the plates cannot, however, be used with type as the printing is not done from the surface of the plate.

As early as 1861 experiments had been made with color printing from photographic plates but it was not until 1881 that the process was perfected by F. E. Ives of Philadelphia. It is based on the fact that inks of exactly the right shade of red, blue and yellow will, when broken up into tiny lines and superimposed, produce all the varying tints of a painting.

It is first necessary to make three plates, one for each of the colors. This is done by photographing the painting or object through "color-filters," one of which will allow only the red to be recorded, another the yellow and the third the blue. With each filter is used a screen, each having lines at a different angle. Thus three metal plates are obtained, each bearing upon its surface fine lines representing the varying amounts of the particular color in the original.

The great test is in the choice of the printing inks. A red which will, when mingling with the tiny lines of yellow, give the desired orange but which will also, when super-

imposed upon the blue, produce the proper shade of violet is obtained only after much experimenting (and this is, of course, equally true of the yellow and of the blue ink).

When illustrations were engraved on metal or on wood, etched or lithographed, the original drawing or painting might or might not be correctly translated by the artist making the plate.

With the introduction of photographic processes conditions were changed. In well-made zinc-plates and photogravures the original is faithfully reproduced: in some cases it takes an expert to decide between original and copy. The half-tone, however, leaves much to be desired, as the brilliancy of the original is dimmed by the use of the screen. In criticizing illustrations this should be taken into account. Although screens are used in three-color work a nearer approach to the original is possible; in this process the chief drawback is that ink must be used to translate effects achieved with pastel or paint: the results are oftentimes very poor.

Since so many of our books and magazines are illustrated it may be well to call attention to a few points concerning the art.

A painting should be dependent on nothing outside of itself: the full force of its artistic appeal must lie within its borders: it should not need even a title. If it becomes more enjoyable when one learns that such-and-such a scene is represented it may be classified as an illustration. There are many such paintings: there are also many so-called illustrations which are really paintings — which do not illustrate. An illustration should have an artistic appeal when unaccompanied by its text but should be more interesting when used with it. In the ideally illustrated book the illustrator as well as the author is a creator: one supplements the other. In Carroll's "Alice in Wonderland" the Duchess is not described: what should we not have lost had Tenniel not been great enough to grasp the quality of the book and make a

drawing of that character (not to mention all the others) as immortal as the story itself?

The real reason why many of us do not like having a favorite tale illustrated is because the illustrator has not been as great an artist as the author and has brought to the task no depth of vision greater than our own. The genius — an illustrator like the late Howard Pyle, for instance — will make us realize that illustration has something to add to any piece of writing, just as something is added to our enjoyment of Shakespeare's plays when they are performed by actors of genius. Those who study the illustrations of Sandys, Abbey (in "She Stoops to Conquer") or Pyle (in "The Wonder Clock" and many another) — to mention but a few — will realize that illustration in its greatest manifestation is indeed a fine art.

Mention has been made of Pyle's "Wonder Clock." There one will find illustrations which harmonize not only with the text but also with the type: the effect of the printed page and the printed picture is the same. One of the faults of the half-tone picture is its lack of this harmony. The quality of the black-and-white type-page is entirely different from that of the grey half-tone: to the critical eye the result is unpleasing. Also unpleasing is the insistent realism of many of our illustrations. Since the type-page is more or less decorative this quality, if harmony is desired, should be found in the illustration as well.

A strange perversion of the art of the illustrator is found in certain books. Instead of drawings or paintings, photographs of illustrations modeled in clay are used. To be thoroughly logical the publishers should have inserted in their volumes casts made from these models. One has only to imagine such a proceeding to realize that the use of photographs of clay illustrations is a violation of the dictates of common sense.

* * * * * *

If the reader will lift his eyes from the page and look about him he will (unless by some chance he be reading this book

in the open country) see a number of man-made objects in the making of which taste — or the lack of it — played an all-important part. And as he looks it must be borne in upon him that a sensitive appreciation of such things is of importance to him. For the objects which surround him unconsciously affect his daily life. Furniture, china, glass and silver — books and magazines — rugs, jewelry and dress: these, when well designed, can add much to his pleasure. If they be ugly in form or color he is deprived of a very real and legitimate means of happiness.

Should he not already have considered such matters it is hoped that this chapter will arouse his interest in the minor fine arts, that in them he may find a new source of unalloyed enjoyment.

BIBLIOGRAPHY

GENERAL

CRANE, WALTER, *The Base of Design.* 1898.
CRANE, WALTER, *Line and Form.* 1900.
DAY, LEWIS F., *Ornament and Its Application.* London, 1904.
PHILLIPPS, L. M., *Form and Colour.* New York, 1915.
ROSS, DENMAN W., *A Theory of Pure Design.* Boston and New York, 1907.
RUSKIN, JOHN, *Seven Lamps of Architecture.* London and New York.

THE BOOK

CRANE, WALTER, *The Decorative Illustration of Books.* New York, 1900.
MIDDLETON, J. H., *Illuminated Manuscripts in Classical and Mediaeval Times.* 1892
POLLARD, A. W., *Early Illustrated Books.* London and New York, 1903.
POLLARD, A. W., *Old Picture Books.* London, 1902.
PRIDEAUX, S. T., *Historical Sketch of Bookbinding.* 1893.
UPDIKE, D. B., *Printing Types.* Cambridge, Mass., U.S.A., and London, 1922.
WHITE, GLEASON, *English Illustration — The 'Sixties.* Westminster, 1897.

CERAMICS

BURTON, WILLIAM, *Porcelain.* 1906.
BUSHELL, S. W., *Oriental Ceramic Art.* New York, 1899.
FORTNUM, D. E., *Majolica.* London, 1896.
WALTERS, H. B., *History of Ancient Pottery.* 1905.

COSTUME

CALTHROP, D. C., *English Costume.* London, 1906.
LACROIX, PAUL, *Manners, Customs and Dress during the Middle Ages and the Renaissance.* London, 1874.

FURNITURE

LOCKWOOD, L. V., *Colonial Furniture in America.* New York, 1901.
MACQUOID, P., *History of English Furniture.* London and New York, 1905.

GLASS

DAY, LEWIS F., *Windows.* London, 1909.
DILLON, E., *Glass.* London, 1907.
DRAKE, MAURICE, *A History of English Glass-painting.* New York, 1913.
SAINT AND ARNOLD, *Stained Glass.* London, 1913.

JEWELRY

FONTENAY, G., *Les Bijoux Anciens et Modernes.* Paris, 1887.
WILSON, H., *Silverwork and Jewelry.* New York, 1903.

LACE

LEFEBURE, ERNEST, *Embroidery and Lace.* London, 1888.
PALLISER, MRS. BURY, *History of Lace.* 1902.

METAL-WORK

BELLOMO, *Pala d'oro di St. Marco.* 1847.
FFOULKES, CHARLES, *Decorative Ironwork.* London, 1913.
GARDNER, J. S., *Ironwork.*

TEXTILES

BUSHELL, S. W., *Chinese Art.* London, 1906.
COLE, ALAN, *Ornaments in European Silks.* London, 1899.
FOWKE, F. R., *The Bayeux Tapestry.* 1898.
HUNTER, G. L., *Decorative Textiles.* Philadelphia and London, 1918.
MUMFORD, J. K., *Oriental Rugs.* London, 1901.
THOMSON, W. G., *A History of Tapestry.* London, 1906.

MUSIC

BY

THOMAS WHITNEY SURETTE

CHAPTER X

MUSIC

The object of this chapter is not so much to supply the reader with information[1] about music or to give him a complete survey of it as to stimulate his interest in it by helping him, as far as may be, to take part in it, and to listen to it intelligently. The volatile character of sound makes music difficult to comprehend unless we hear the same piece many times, and the symbols (staff, notes, rests, etc.) are not commonly understood as are the symbols of ordinary language. But these difficulties may be partly done away with. A considerable number of short compositions will be named here, and these should be played over many times. And the reading of musical notation is not an insuperable difficulty for one who desires to sing. Too great emphasis can hardly be laid on the necessity for actual contact with music itself. The first and best way to accomplish this is through singing. Suggestions will therefore be given here as to ways and means of bringing this about.

But it is first necessary to make clear that music is not an art of representation; it does not portray or depict. And even though the other arts do represent, and take their subjects from nature, they do not represent things as the ordinary eye sees them. The artist has not only a more sensitive vision, but a greater power of seeing the significance of things. He *composes* nature. He arranges his subjects so

[1] Information about music is available in every library. The student who wishes a brief general survey will find it in *The Study of the History of Music*, by Dickinson. For special subjects consult Grove's *Dictionary of Music and Musicians*. Parry's *Studies of Great Composers* contains brief, clear biographies. *The Oxford History of Music* deals comprehensively with the larger phases of music's development.

A large number of the compositions referred to herein are to be found in the catalogs of music for mechanical instruments and where performances in the ordinary manner are impossible it is recommended that such instruments be used. All the symphonies referred to are published for piano solo, piano duets, and for two pianos (one performer at each).

as to produce in his picture a harmony in itself. To him painting is not so much a simulation of the thing seen, as a record of his own reaction to it. The thing in which he is interested is the work of art itself and obviously this should be the purpose of the observer also.

It is the same with literature. The object of a great writer is to present the world he deals with in terms of his own imagination. The more closely he presents actual things, by themselves, the less likely he is to arrive at the truth. He, too, composes his subject matter. With him, as with the painter, his art represents his own reaction to human life. Take, for example, the beginning of "The Eve of St. Agnes" by Keats. The bare facts are as follows: It is a cold night in January, so cold that even the animals feel it. On these facts is built up the opening stanza:

> St. Agnes' Eve,—Ah, bitter chill it was!
> The owl, for all his feathers, was a-cold;
> The hare limp'd trembling through the frozen grass,
> And silent was the flock in woolly fold.

It is obvious that, while certain facts serve as the basis of these lines, the element of narration in them is not important; what makes them notable is the art displayed in them, and the appeal they make to our imagination. Let the student read the first stanza of the "Ode on a Grecian Urn" by the same poet. This is merely about an urn with figures in relief upon it; figures of men and women, animals, etc. Out of this inanimate carved object Keats has evolved a sort of philosophy of beauty; he has seen the thing imaginatively; everything upon the urn lives through this quality of the poet's mind.

Music, then, differs from the other arts in this, that it is a pure and unadulterated record of the reaction. In other words, music speaks in terms of itself.

The composer's impulse may arise from some person, thing, or idea, and he may choose to supply some key to that by giving his music a title. Beethoven entitled his sixth

symphony "The Pastoral," being careful, at the same time, to state that it was more an expression of emotion than an actual picture. Schumann added titles to many of his pieces after they were composed. In such a composition as Debussy's "L'Après-midi d'un Faun," while the music is still speaking in terms of itself, it does quite closely reflect the moods of the poem which serves as its motto. Such "program" music, so called, survives in the last analysis, solely by its interest and beauty and not by its descriptive power.

The *art* of music, then, is an art expressing itself in terms of meter, rhythm, melody, harmony, counterpoint, form, style, etc., etc., and creating by means of them a thing of beauty. Our appreciation of it consists first of all in an emotional response to the music itself, but that appreciation may be greatly enhanced by a vivid response on our part to *all* its elements, *i.e.*, to the swing of the meter, the lilt of the rhythm, the play of the counterpoints, one against another, the arrangement of the themes into a coherent form, etc., etc. The person who understands the Keats "Ode" just mentioned is the person who answers to the beauty of sound in the words, to the rhythm, to the highly imaginative treatment of the words themselves, etc., as well as to their significance as meaning.

The beginnings of music are to be found in what are called "folk-songs." These are simple melodies, at first crude, finally quite perfect, which sprang spontaneously from the hearts of simple people and were to them a means of expression for their emotions, and for their innate love of beauty.

The reader should turn to a book of folk-songs[1] and proceed to try singing some of them himself. "The Sea-gull," in the book first named below, would be a suitable begin-

[1] *One Hundred and Forty Folk-songs*, by Davison and Surette, Concord Series, E. C. Schirmer Co., 221 Columbus Ave., Boston. *Folk-songs for Schools*, Gould and Sharp, Curwen and Co., London. *Folk-songs, Chanteys and Singing Games*, Farnsworth and Sharp, H. W. Gray Co., New York.

ning. After singing the song several times its meter (time), rhythm (length of the different notes), contour (pitch, movement up or down), and form (disposition of the four phrases) [1] should be studied. It will be at once observed that the little rhythmic figure is the element that binds the whole tune together, and that, of the four lines, the third has a different contour from the others.

I have made this brief study of a typical folk-song in order to present to the reader in their simplest form those principles upon which all great music is based. There is lacking here the element of harmony, and in highly developed composition there are other important elements, but in this song one finds the basic properties; the principles here used are common to nearly all music.

The reader should now sing and study a considerable number of folk-songs with the purpose of investigating their properties. He will find in all of them some basic figure binding the song together; the form, in most cases, will be the same as in the "Sea-gull." A variant of it may be observed in "The Meeting of the Waters," where the form is A-B-B-A-A; B representing the phrase of contrast. In "My Gentle Harp," [2] there is an emotional climax in the last phrase but one, the form is more plastic, while the whole song is held together by the rhythmic figure of three notes with which each phrase begins. It is obvious that all such analysis as this is fruitless *by itself;* it must be based on a love for the music, and can never be a substitute for that. Its object here is to turn the reader's mind towards certain qualities in music which it is necessary to apprehend in order to enjoy it completely.

The student should, at this point, examine into the use in poetry of these same principles. Shelley's "Ode to the West

[1] A phrase in music is similar to one in literature — the term implies a short series of notes in succession having coherence within themselves, but not (usually) conclusive in character. Two or four phrases ordinarily make a sentence.

[2] From *Home and Community Song Book*, Concord Series, E. C. Schirmer Co., 221 Columbus Ave., Boston.

Wind" will serve for this purpose. He should note the vowel sounds at the ends of the lines, the middle line ending being carried over as the ending of the first and third line of the next verse. He should note the use of the words "Hear, oh! hear," and see how they bind the whole together. The principle is found in design everywhere. He should also note, as highly important in all poetry, the use of the same consonants or vowels in each line. The folk-song has a profound influence on later music,[1] both vocal and instrumental.

The first school of composition, so called, began in the Roman Catholic Church. The Greek modes (scales) had been adopted as the basis of the music in the early Christian Church. There were seven of these modes.[2] The Greeks, as far as we know, while making extensive use of singing in unison and octave, and while valuing music highly, had not developed it as an art by itself — separated from philosophy and ethics. In the time of Pope Gregory IX, the Roman Catholic Church adopted and systematized these modes, and from that time onward there was gradually developed a school of music based on a principle which has dominated music ever since. This principle or method of writing is called "Polyphony" (meaning "many-voiced"). This came about through experimentation with adding a second part to the principle chant, and this soon grew into vocal compositions in many voices. The term used to describe the second voice or all the secondary voices was "counterpoint."[3] The fixed part was called *cantus firmus*. But the important element in the situation was that the counterpoints were derived from the original melody. This principle is one recognized in all art, namely, that the detail

[1] Dvořák's *New World* Symphony is based on folk-tune idiom. Grieg uses many folk-tunes, and his idiom is largely formed thereon; Haydn adopted many Croatian folk melodies; and even the mature themes of Beethoven owe many of their characteristics to the original prototype of song or dance tune.

[2] The seven Greek modes may be reproduced on a piano by using only the white keys and making a scale starting on each one successively. See Grove's *Dictionary of Music and Musicians* "Modes."

[3] Notes were at one time called "points."

should grow out of the structure. It applies especially to architecture, but also to painting, literature, and sculpture.

This vocal polyphonic style of writing dominated scholastic music for many centuries, reaching its highest point in the music of Palestrina (born about 1515). It is extremely difficult music to sing, being written without accompaniment and requiring great skill in intonation. It is quite devoid of those rhythmic figures which characterize folk music and establish the identity of any folk-tune, and the result of this is that the polyphonic character of it is hidden under a guise of mere chords. If, for example, the following rhythm, is set (in another part) against this: it is obvious that each can be distinguished from the other, whereas, if each part contains notes of the same length, the identity of each is somewhat obscured, even though the contour be different. The reader should examine "Lo! How a rose, etc."[1] by Praetorious (for mixed voices — Schirmer, New York) and, if possible, he should gather together a few people to sing it with him or for him. In this beautiful piece each of the four parts maintains a certain individuality, while in the cadences at the end of each four-measure phrase the contrapuntal character of the parts fully reveals itself. If the reader can take part in this piece with others, he will immediately have a vivid experience of counterpoint, *provided* while singing his own, he can listen to the other parts.

These two phases of the development of music were quite distinct. It is true that folk-tunes were sometimes incorporated into the religious polyphonic music, but only into its debased forms or when the tune was disguised beyond recognition. During the sixteenth and seventeenth centuries music was, however, spreading its wings and trying flights in all directions. Operatic[2] forms sprang up and experiments were being made with instrumental forms. These, however, had to wait for the development of musical instruments.

[1] See, also, *She Is So Dear*, by Praetorious. Short choral pieces for mixed voices (and a few for female voices) by Palestrina are published by Schirmer, N. Y.

[2] "The Opera" in Grove's *Dictionary*.

Henry Purcell (1658–1695), the foremost English composer, contributed to the advancement of the art at this period of its development by holding fast, against the tide of musical frivolity in his time, to the old traditions and by using them wisely. His music comprises operas, suites, songs, and occasional pieces. He was the forerunner of Bach inasmuch as he used instrumental polyphony with great skill.[1] Songs like "Full Fathoms Four" reveal his genius. His "Golden" Sonata for piano and strings (or piano solo) should be played and studied. This is a sonata in five movements. The first is made from a theme of formal character given out in the bass (left hand), against ascending chords in the treble (right hand). The top notes of the first two chords are used interestingly in the sixth measure twice as fast as in their original form. The formality of the chief subject of this movement does not prevent its being interesting. It represents a type of piece quite common at that time when instrumental polyphony was beginning. The second movement, *Adagio*, is highly expressive and beautiful. It is all based on the first four chords, but the plaintiveness is appealing and the harmonic freedom quite advanced for that period. The student should note especially that it is without rhythmic contrasts such as exist in the first movement, and that it represents a tendency towards simple, unpolyphonic chord structure. The third movement is polyphonic again, and much more strict than the first, being fugal in character. The fourth movement is of great beauty and anticipates Bach. The student should especially note such dissonances as result from the holding over of notes into another chord — as when the G sharp in the bass in measure 4 sounds against the C and E above it, producing an expressive dissonance which is resolved when the G sharp changes to A. Choruses for mixed voices, such as "With Drooping Wings," are available in cheap editions.

The next great phase in music is represented by Johann

[1] A volume of songs and his instrumental pieces may be had in Novello's edition (H. W. Gray Co., New York).

Sebastian Bach (born 1685). The operatic craze which spread over Europe and England seems to have been less violent in Germany than in other countries, and we find there composers who used the heritage of the vocal polyphonic schools and carried it on. Bach's was the greatest mind that ever applied itself to music. In brief, Bach's music is the old polyphony plus rhythm. His music is full of those energizing rhythmic figures which we have found to be the basis of folk-tunes. Even the appearance of a page of Bach's music, compared to one of Praetorious or Palestrina reveals this. Let the reader examine a chorale [1] of Bach and this will be obvious to him. These chorales were the religious folk-tunes of the period. Bach added contrapuntal parts to them, and these parts grow out of the original melody according to the principle already stated. In this Chorale "What Tongue Can Tell" the little figure at the beginning of the melody serves as the basis of all the counterpoints. The reader should learn to sing this and many of the other chorales in the book mentioned. Even though he only sing the melody while the chorale is played on a pianoforte or organ he will be able to see into this matter; but the best way of getting at it is to find a group of people to sing it in four parts.

An example of Bach's style will be found in the final chorus [2] from his "St. Matthew Passion." This is one of the noblest of his choral compositions and will repay constant study. If possible, the reader should take part in singing this chorus.[3] By no other means can he fully enter into the significance of it. I know of no better example of the power of music to give expression to deep human feeling without depending on what is commonly called "tunefulness." The chief theme of this piece seems somewhat mechanical on first hearing. One can call to mind a hundred melodies superior to it as melodies, but some deep, noble feeling animates it;

[1] No. 19 in *Twenty-five Chorales of Bach*, Concord Series, E. C. Schirmer Music Co.

[2] Called "Here yet awhile," H. W. Gray Co., N. Y.

[3] If a double chorus is not available use only Chorus I.

it springs from a profound heart and mind; its inward beauty is unmistakable. The passage (page 186) just before the return of the first theme is of an ineffable tranquillity.

There was no complete orchestra in Bach's time, but he used violins,[1] oboes, trumpets, etc., with the organ. He was a prolific composer and wrote a greater number of fine works than have been left by any other man. The reader should examine carefully Fugue No. 5 (in D major) from the second volume of the "Well Tempered Clavichord" by Bach. This fugue (*fuga*, flight) is a composition in four "voices," so called, each one entering in turn, while the other (or others) continues with phrases drawn from the theme itself. Let the reader first play this fugue through; then he should proceed to examine the plan of it, noting the entrances of the different voices, and the contrasts provided by the changes of key. This is an interesting example of that kind of economy in the use of material which is characteristic of great art. Practically the whole piece is made from the first phrase which contains but eleven notes. The reader is cautioned against the supposition that this music represents merely skill. Quite the contrary is the case, for it is full of a restrained and ordered beauty.

The chief difficulty that presents itself to a person unfamiliar with Bach's music is his idiom. This period in the development of the art of music produced its own manner of saying things — and this is true of any art at any time — and that manner is bound to be strange to anyone living long afterwards. Furthermore, Bach's serenity and restraint are apt to strike the listener at first as excessive. But if the reader will familiarize himself with some of the chorales and then go on gradually to more extended compositions, he will find himself at last learning to understand them.

During the century just preceding Bach, much experimentation was carried on with music for instruments. Types of pieces appeared in which the influence of the old vocal po-

[1]There are fine sonatas for violin alone, and for violin and piano.

lyphony was evident. Among the most important of these was the Suite. This was a series of short pieces all in the same key and partly derived from the folk-dances of the period. These pieces were called variously Bourrée, Sarabande, Gigue, Allemande, etc., with perhaps one slow and un-dance-like piece to give opportunity for contrast and for the expression of a meditative mood. But the distinguishing quality of style in them was polyphonic. The reader should examine any Suite by Bach, of which there are several series. He will find that *each* part of the Suite follows one of the common forms to which I referred in dealing with the folk-song.

Bach's[1] music is not pietistic or ecclesiastical, but has on the contrary the broadest human basis. It is not easy to make clear how music can be impersonal, but that is what Bach's music is. I mean by the term "impersonal" as applied to music, a certain restraint, a certain quality of detachment, and a certain sense of values. These qualities in any artist will enable him to see himself, to value his own impressions rightly; and they will give him, also, a sense of proportion. An example in literature of the lack of these qualities would be what is called a "best-seller" among contemporary novels, where false sentiment overpowers judgment and sense of proportion. Tchaikovsky is a composer possessing very little of the quality of impersonality, although a fine composer in spite of that. Bach's reactions to life are sane and just. In his music there is never that excess of emotion that ruins any statement; he never writes to show off either himself or the performer. You feel, therefore, in his music something true, noble, and permanent. In addition, one must say without qualification that he was a great artist or master of his craft.

[1] In addition to the pieces by Bach already named the following will prove valuable for study: the two-part *Inventions*, *Fantasia* in C minor, other Preludes and Fugues — all for piano — arias like "Have Mercy, oh Lord" from the *St. Matthew Passion*, and the *Sonata* for violin and piano in F minor. Many short instrumental pieces by Bach may be found arranged for mechanical piano-players or reproduced for the phonograph.

So complete was this mastery that he fully attains to that state, which is the goal of every artist, wherein the thing to be said and the manner of saying it are one.[1] This is the perfection of all craftsmanship of any kind whatever, whether it be sailing a boat, building a house, or making a symphony.

Another important phase of music's development in this period is represented by Handel (born 1685). He is chiefly known by his Oratorios, although he composed many instrumental pieces of different types. The Oratorio is a dramatic-religious composition sung without costumes or scenery and based on some Bible story. Handel's best known Oratorio is "The Messiah." The Oratorio is, as music, loosely put together and, from the point of view of form, somewhat anomalous. It is held together by the story. The music comprises solos (*arias*), choruses either monodic[2] or polyphonic, recitatives (not unlike those in the older operas), duets, orchestral introductions or interludes, etc. A typical aria is "I know that my Redeemer liveth" ("Messiah"). Something of the florid vocal style is to be observed here. The chorus "All We Like Sheep" is a good example of the vocal polyphony of the period. In this chorus Handel deals with the text with a certain amount of imagery. The different voices "stray," one from the other. There is not the same depth of feeling and significance that we find in the chorus from the "St. Matthew Passion" of Bach.

The few forms named herein do not by any means exhaust the varied types of musical compositions produced during the period. My object is to give the reader the salient elements in the development of music. If he will consult the Oxford "History of Music" and Grove's "Dictionary" he will find references to other composers and other types of music. All arts progress gradually and are subject to innumerable experiments.

During the seventeenth century the orchestra became crys-

[1] See Pater's *Essay on Style*.

[2] *Monodic* means literally "one-voiced," which implies in this case one melody (sung by the sopranos), the other parts making a background of chords.

tallized, the pianoforte was developed further, and with the advent of Haydn (1732) and Mozart (1756) instrumental music advanced by leaps and bounds. Sonatas for piano alone, and symphonies for orchestra began to appear. Here, too, the stream of folk music flows into that of the schools and we get the beginnings of modern orchestral music which owes much to each of these sources. Haydn was of peasant stock. He had great inventiveness, but not great imagination. He used the folk-tunes of his own country with considerable skill and wove them into instrumental pieces of various sorts. He reaches no great heights. He is like a story-teller who makes no observations on his characters and draws no conclusions from them. He narrates. He is like Robert Burns, though not so great.

Out of the various forms existent when Haydn came on the stage of life he produced a symphony in four movements,[1] coherent and satisfying. This was in itself a great accomplishment requiring considerable mastery over the materials at hand, for he had to preserve the interest of the listener over a considerable period of time with no adventitious aids, but depending entirely on the invention of certain themes in juxtaposition, and on evolving something out of them. Under Haydn's hand the first movement took on the following form:

Statement	*Development*	*Restatement*
Introduction (optional). Theme I. Connecting link. Theme II (in related key). Coda (or ending). Two keys predominate here.	Action. Great diversity of treatment. Variety of keys.	Theme I. Connecting link. Theme II (same key as Theme I). One key predominates here.

By *development* is meant in music a process through which the small rhythmic units, characteristic groups of notes, take to themselves for the time being an independent existence; they may be lengthened or shortened in time (*i.e.*,

[1] The word *movement* is used in music to indicate the four separate and distinct parts of a Sonata or Symphony.

played faster or slower); they may be turned upside down or they may form a little tune of their own; they may be given entirely different chords than were formerly used; they may be intensified by the tone color of another instrument. In this process is comprised the very essence of the art of music. There is nothing that the listener hears that affords him, when he understands it, so much enjoyment as this does. This development is like the plot of a novel.

The second movement was usually founded on a lyric theme like a song, and after this theme had been given out twice another theme of the same character would ensue and then the first theme would be repeated, with, perhaps, a coda. The formal difference between these two movements lies in the fact that there is usually no development section to a slow movement, each theme being complete in itself, and, therefore, requiring no development, whereas, the theme of the first movement was usually less lyric and less conclusive. The slow movement was sometimes cast in Variation[1] form. The usual plan for such a movement is as follows: A theme, usually of a definite lyric character, is clearly given out; this is followed by a series of Variations, so called, each the same length as the original, each having some definite connection with the original while at the same time possessing a character of its own. In many cases the persisting element is the harmony. The most common plan for a slow movement is as follows:

1st Section	*2nd Section*	*3rd Section*
Theme I (perhaps repeated)	Theme II in a related key and in a mood contrasting with Theme I.	Theme I usually somewhat varied or elaborated

The third movement was usually a Minuet left over from the old Suite form and retaining the same general characteristics.

[1] See first movement of Mozart's piano *Sonata* in A Major, and first movement of Beethoven's piano *Sonata* in A flat Major, Op. 26.

The fourth movement was often a Rondo in which one main theme, usually of a lively character, was repeated three or four times with contrasting passages or themes in alternation. The plan of the Rondo is sectional again, and is a sort of extension of the slow movement form given above:

A	B	A	C	A	B	A
Theme I usually a well-defined melody in rapid tempo	Theme II Contrasted with A in key	Theme I usually repeated verbatim	Theme III Usually modulating freely to other keys for the sake of contrast	Theme I usually repeated verbatim	Theme II (again) usually in key of first theme to bring the music back to its starting point.	Theme I usually repeated verbatim and sometimes followed by an ending called a "Coda."

The best symphony to study at this stage is Mozart's in G minor. It is much finer than any of Haydn's, and, at the same time, it illustrates perfectly the form I have been describing. The reader should play or have played for him the first movement of this symphony using as a guide the plan of the first movement form given on page 434. The Statement (or "Exposition") of this movement extends to the double bar. It contains: Theme I extending as far as measure 28 (given out twice, the first time in measures 1 – 16, with a connecting passage, 16–20, the second time 20 – 28). Then follows a passage connecting Theme I to Theme II and containing a secondary theme of which interesting use is made later. Theme II enters at measure 44 and continues until measure 66, after which, and leading eventually to the double bar at 100, there is a slight use of the motive of Theme I followed by a sort of fan-fare or formal ending. Now begins the Development Section, which, after preliminary chords, plunges into fanciful play upon the first three notes of the whole movement. At measure 119 a passage ensues which illustrates the methods commonly employed at this time in pieces of this sort. The notes of measures 30 – 31 (from the

connecting theme) are used at twice their former speed as a counterpoint to Theme I. The preparation for the entrance of Theme I again in its original form and beginning the third section (Re-statement) of this movement, consists of the use of the initial motive of three notes over a "pedal point," *i.e.*, a sustained note continually sounding over or under varying harmonies and (perhaps) melodies. This extends from measure 149 to 164, and is interesting as giving the effect of repose before renewed action. There is (164–166) a delightful out-cropping of the pedal point passage with the entrance of Theme I. The Slow Movement of this symphony is in three sections. The first extends to the double bar, the second extends to 74, and the third extends to the end. The middle section modulates freely. The Minuetto is in the usual three-part dance form. The Finale is in first movement form. The reader should carefully trace the derivations of the material used in the middle section.

Mozart was one of the greatest of composers. His father was an educated man and Mozart had a thorough grounding in his art. His craftsmanship is quite perfect.

Mozart's contribution to music was not confined to symphonies and chamber music. He wrote in nearly all forms; masses, motets, songs, operas, etc. His operas represent his highest achievement. Works like "Don Juan" still remain the most perfect specimens of the older form of opera. Not only are the arias beautiful and true, but the great finales are full of dramatic force. The student should, if possible, procure the vocal score of "Don Juan," [1] study the libretto, and make himself familiar with the music.

Mozart's music represents the culmination of a period in the growth of the art. Its formality and perfection are as though a crystallization had suddenly taken place. But some influence was doubtless exerted on all music by the general culture of the time, and even, perhaps, by manners, ways of dress, etc. One cannot imagine a person in a

[1] Published with English text by Boosey and Co., London.

powdered wig either composing or listening to a piece like Strauss' "Til Eulenspiegel." It will be profitable for the reader to hear some of Mozart's Arias. Many of them may be found in the catalogs of phonograph records. Fine examples are "Possenti Numi" from "The Magic Flute," [1] "Voi che sapete," from "The Marriage of Figaro," and "Batti, Batti," from "Don Juan." But, as with all the other music mentioned herein, it is desirable for the reader to get the scores and "sing at it" himself. Mozart's song "The Violet" is interesting in itself and as foreshadowing the dramatic song of Schubert.

The advent of Beethoven [2] (born 1770) brought about great changes in this rapidly growing art. His career as a composer was well started when the French Revolution broke out. By nature a democrat, Beethoven sympathized with the struggles of the proletariat, and it is on record that he dedicated his "Third Symphony" to Napoleon, looking upon him as the champion of the people. When Napoleon proclaimed himself Emperor, Beethoven, in disgust, tore off the title page.

In his first period Beethoven produced compositions of varied sorts, but, even then, he showed a decided tendency towards the cyclic form of the Sonata and Symphony, and it was in these forms that his greatest works were written. He not only infused into them a new spirit, but he developed and enlarged the form of each one of the four movements.

But the real contribution of Beethoven was that he took music out of its formal setting and made it freer. Mozart's symphonies are like models of exquisite beauty — in proportion, in balance, in symmetry, in purity of sound, in loveliness of melody, in coherence, they are unsurpassed. Mozart is like Raphael; his colors are clear and simple, his composition definite and strong, his drawing is not sugges-

[1] Lowes Dickinson has written a delightful fantasia on the story of this opera called *The Magic Flute*.

[2] Grove's *Beethoven and his Nine Symphonies* gives a brief analysis of each symphony and contains much interesting matter about the composer.

tion but statement. Beethoven is more like Rembrandt. Or Mozart may be likened to the poet, Gray, who was his contemporary. His music is strophic and balances as do the lines and stanzas in the "Elegy in a Country Churchyard." Beethoven's music burst the bounds of the older art. His thought is too big for the somewhat miniature frame-work of his predecessor. You never feel that Mozart tells you what he is; Beethoven's music, on the contrary, *is* himself.

This greater freedom of expression is brought about, also, by the free use of dissonances.[1] Every great composer finds it necessary to create for himself a new medium of harmony, and Beethoven's harmonies are, at times, exceedingly harsh. But he uses harmony as a means to an end.

In the slow [2] movements of his Symphonies and Suites he is usually serious and often profound. The Minuet gradually gives way to the Scherzo, which is faster, more humorous, sometimes sardonic or even terrible. The last movement is usually in the same form as the first. This four-movement form of the symphony was common up to this time. Beethoven, in his sixth and ninth Symphonies, departs somewhat from it.

Sonatas for pianoforte alone, or with violin, the various forms of chamber music (trios, quintets, quartets, etc., with or without pianoforte) and symphonies are all alike as to form. Occasionally the slow movement comes first, as in the "Piano Sonata," Op. 26, of Beethoven, and sometimes it is played after the Scherzo. By investigating the piano Son-

[1] See Grove's *Dictionary* for the technical meaning of this term.

The reader should examine the first Pianoforte *Sonata*, and the *First Symphony* to form an idea of Beethoven's early style, and then turn to the *Fifth Symphony*, or to the Piano *Sonata*, Op. 13. Where it is possible the symphonies should be performed in four-hand arrangement. They are also published for two pianos (one performer at each). Many themes from the Sonatas and Symphonies should be played, so that some familiarity with Beethoven's style may be acquired. For a study of the *Fifth Symphony* see also, *The Appreciation of Music*, by Surette and Mason (H. W. Gray Co., N. Y.).

[2] The student should examine a large number of these. See, also, Grove's *Beethoven and his Nine Symphonies*.

atas of Beethoven the student will see that, while still remaining within the general plan, a certain latitude is possible.

There is no composer who makes a wider appeal to human sympathy than Beethoven. He understood the combat of life; he was a militant; and because of that his music finds response in the hearts of a vast multitude of people. He knows nothing of sophistry, of conventionality, of conformity, but speaks out what is in him. If facilities exist for doing so, the student should play or hear several sonatas and symphonies by Beethoven. Sonatas, Op. 13, 26 and 5, and Symphonies, No. 5, 7 and 3 would be profitable. It is necessary to study thoroughly the first and last movements of these, as they present the most difficult problems. The first movement of Op. 13 has a highly interesting middle section (beginning after the double bar) which opens with the theme from the Introduction. A motive of this introductory theme appears in measures 4 and 5 of the development section (measures 132–33 of the whole movement). Op. 26 begins with a Theme and Variations. This form was often used by Beethoven. Here, as is common, a theme of great simplicity is first given, after which a series of variations occur and then a brief coda. It should be noted that the variations are of precisely the same length as the original. The first one retains the original harmonies but breaks up the melody. The second likewise has the same harmony, while the melody is smoothed out, and is given to the left hand in more rapid notes. In the third the minor key is used and the melody has even less beauty of contour. The fourth entirely changes the mood, while retaining but a faint reminiscence of the theme itself. The fifth brings greater life into the theme. The harmony remains constant throughout the whole piece. The Coda begins at *Dolce cantando*. The reader is urged to make an independent study of Op. 53, using as a guide all that has been written herein about form in music.

The Fifth Symphony is the clearest for study purposes. It is one of Beethoven's finest works. The reader will have little difficulty in tracing the uses to which the themes are put, particularly the first theme of the first movement which is used also in the Scherzo, and echoes of which are to be found in the other movements.

The next phase in the development of music is represented by Schubert (born 1797). One of his great contributions to the art is found in his songs. He lived just at the time when the short lyric poem was appearing, and when what has been called "Romantic" art was born. He set many fine contemporary poems to music, and he created the dramatic song. The student should examine such songs as "Haiden Röslein," "Ave Maria," and "Du bist die Ruh'," which represent the point of departure from the folk-song into the more mature type. Mozart, in songs like "The Violet," reached out towards the dramatic song, but Schubert carried the type to a high point of perfection. Songs like "Der Doppelgänger," "Der Erl König," and "Tod und das Mädchen" well illustrate this. Schubert also increased the significance of the accompaniment and made it more beautiful, as in "Auf dem Wasser zu Singen."

The so-called "Unfinished Symphony" will serve as an example of Schubert's instrumental style. Two movements only of this have survived. The form is similar to that of a Beethoven symphony, but nearly the whole substance is lyric. Especial attention should be paid to Schubert's modulations. No one excels him in the power to surprise by a sudden, yet simple change of key. This is specially to be observed in the 2nd movement of this symphony, measure 72; similar passages occur later. Schubert's piano music is characteristic and should be studied. He wrote quite fine chamber music, of which the "String Quartet" in D Minor is perhaps the finest. In this work he uses the theme of "Tod und das Mädchen" as the subject of the slow movement.

Schumann (born 1810) exercised a considerable influence on the development of the song and of piano music. His songs carry out, as did Schubert's, the meaning of the words, and are, perhaps, even more intimate and tender. The series of songs called "Dichterliebe" should be studied as examples of the essential qualities of Schumann's style. Many of his songs are available for the phonograph — as, for example, "Widmung," "Die beiden Grenadiere," "Frühlingsnacht," "Ich grolle nicht," "Die Lotusblume," "Mondnacht" and "Du bist wie eine Blume."

Schumann's piano music represents a new phase of the art. The grand piano had but recently been perfected — Beethoven was the first composer to have one — and Schumann writes for it with full understanding of its possibilities. He rigorously avoids those conventionalities[1] of style which are found in Mozart's piano music and in some of Beethoven's. His own style is free, and the piano sounds, under his hand like a *harmonic* instrument rather than one made for sustained melodies. His chords are written so as to be sustained by the damper pedal instead of depending on being held down by the fingers. But the essence of his style lies in its romantic quality and its picturesqueness. Many of his piano compositions have titles and much of his music seems to lie in the borderland between music and literature. The student should examine his "Nachtstück," his "Novelletten," and his "Kreisleriana." A characteristic of the Romantic style is surprise; unexpected turns of phrases, and waywardness of utterance characterize Schumann's music. The "Nachtstück" in F, for example, has an entirely unexpected ending; the Novellette in D minor passes by an interesting and unforeseen progression into its second theme (called "Trio"); and at measure 15 of the Trio occurs another quite delightful and sudden change of key. The set of small pieces for children is also characteristic. The early nineteenth century witnessed a wave of

[1] See "Alberti" in Grove's *Dictionary*.

so-called "Romantic" [1] feeling. The poetry of Heine will serve as an illustration of its effect on German literature, and much the same movement is to be observed in English poetry.

Contemporary with Schumann stand Mendelssohn (1810) and Chopin (1809). The former did little to advance the art itself while at the same time contributing to it interesting and beautiful compositions. His "Lieder ohne Worte" should be examined, also his "Rondo Capriccioso," both for piano. Of the former, numbers 9, 14, 18, 22, 27, 30 and 34 are among the most interesting. There are fine choruses by Mendelssohn. One of the simplest is called (in translation) "Farewell to the Forest." Part songs for his incidental music to Shakespeare's "Midsummer Night's Dream" are also simple. His symphonies are clear and gracious, but not vital compositions. His Oratorios "Elijah" and "St. Paul" are, like all his other music, well written and melodious. His violin Concerto represents him at his best. "If with all your hearts," an aria for tenor voice from Elijah, and "Oh! rest in the Lord," an aria for alto from Elijah, are typical.

Chopin was much more original and has left us a considerable amount of fine piano music, but he never dealt successfully with the larger forms. His genius lay in creating fine melodies which were essentially in the idiom of the piano. His exile in Paris and the Polish nationality of his mother are both reflected in his music. There is an effulgence in his style and an impassioned quality which give him a unique place among composers. Students should study his Nocturnes, Preludes, Études, Mazurkas, and Polonaises. The best book about Chopin is by Frederick Niecks.

Richard Wagner (born 1813) was the strongest influence

[1] The student should read *Music and Musicians* by Schumann; Carlyle's essays on German Romance, also his essay on Jean Paul Richter; Arthur Symons's *The Romantic Movement in English Poetry* (especially the last 100 pages) may be studied. Fuller-Maitland's *Life of Schumann* should be consulted; also Hadow's *Studies in Modern Music*.

in the development of music in the nineteenth century. He wrote a series of Operas, or, as he called them, "Music Dramas," in which this phase of the art was quite revolutionized. The basic idea underlying them is that the drama itself is the important thing. In the older operas, the song, or even the singer, took first place. The action stopped in order that a set piece might be performed, and the personality of the singer played an important part in the situation. This often produced situations quite absurd from the dramatic point of view. Wagner called such Operas "concerts in costume." Between the arias and the other set pieces of these older operas occurred the recitatives, through which much of the plot was revealed. Wagner made his recitatives metrical (*i.e.*, the music of both the orchestra and the voice flowed onward as it does in pure music), but the voice part was not a song but rather a continuous line of free recitative, halfway between song and speech. When some great emotional moment arrives the music becomes more lyric, set pieces being sung only where the situation naturally permits. Wagner also attempts to characterize by *leit-motifs*, short phrases in which the salient quality of a person, thing, or idea is embodied. It will be obvious that every living person offers an opportunity for characterization, which an inanimate object does not. If the hero is brave, young, and noble (as Siegfried was) the music can simulate those qualities; so, also, with such feminine qualities, as tenderness, waywardness, etc. But an object, such as a ring, presents insuperable difficulties, and when Wagner creates a passage of a few notes to indicate the ring he acts empirically. The motifs first appear when the thing or person or idea becomes a part of the story — is, perhaps, first alluded to in the text — and from that time onward you, the listener, are supposed to associate the object and the music together. As the opera proceeds these *leit-motifs* multiply, are combined together, and appear in changed forms until the whole texture of the music becomes quite complex.

Wagner uses the orchestra with great skill to help him tell his story. The orchestra becomes almost a character in the play. One listens to hear comment from it about what is going on on the stage. At times it even holds the key to the situation. The great Music Dramas were scored for an orchestra much larger than had ever been used before, and the whole effect is quite splendid.

Wagner chose for the subjects of his Music Dramas some of the immortal legends of the world, and in so doing immediately raised the art to a high level. Gluck and the other composers before him had used Greek legends, but opera in general had been too often based on silly, vapid stories of intrigue. If the student can make a study of two of Wagner's operas, he may well take "Lohengrin" and either "Tristan" or "Die Meistersinger." He should use, in connection with this study "The Music Dramas of Richard Wagner" by Lavignac. Careful note should be taken of the difference in treatment of the scene in Act I of "Lohengrin" when Elsa first enters, and that which immediately follows the end of the combat between Lohengrin and Frederick.

In "Die Meistersinger" Wagner gives us a comedy, and a satire. The strict pedantic rules of the Meistersingers are held up to scorn; but both the good and the bad in the old guilds find expression. The reader should study especially the third scene in Act II, the Introduction to Act III and the Finale to that Act. The first mentioned of these scenes is a masterpiece of art. The delicate comedy, the fancy, the romance, are quite wonderful, and the orchestra part in it is a vital one, while the brief song by Sachs beginning "Dem Vogel, der heut' sang" has in its heart all that that moment of feeling may contain. The Introduction to Act III is one of the finest things Wagner ever wrote. Its connection with the final scene of that act should be carefully studied.

The next phase of music is represented by Johannes Brahms [1] (born 1833). He composed in nearly all the forms

[1] *Life of Brahms* by Florence May. *Development of Symphonic Music* by Surette.

save opera. His style is still supposed by some people to be obscure (just as Meredith's is). He shows strongly the influence of the Romantic School, but he was a great student of Bach, and, by hard work, made himself a fine craftsman in that most difficult and important of all mediums, counterpoint. He had a fine sense of structure and the span of his mind was wide. His idiom, like that of any other original mind, was new and distinctive. It may be observed as avoiding obvious rhythms — his bass often enters on an off beat instead of on the first; he also crosses his rhythm frequently. Many of his melodies have a broad sweep. He contributed to the symphony a new style of third movement, taking the place of the Scherzo, and he wrote more dramatic and highly organized Finales than his predecessors did. His chamber music represents him at his best. In short, many of the composers of instrumental music after Beethoven had lacked Brahms' architectonic sense and his command over the resources of the craft. The student should study Brahms' Intermezzo and Rhapsodies for Piano. In his "Intermezzo," Op. 117, Number 1, the outlines of the simple melody are somewhat blurred by the arrangement of the notes of the right hand, while the placing of the lowest bass note on the sixth beat instead of on the first helps even more to surround the piece with an atmosphere and to avoid what is obvious or commonplace. In the middle part of this piece the use of the three notes from the first theme should be observed; they appear in three-four time instead of in six-eight; in the sixth measure before the first change in signature, the melody is in six-eight time while the accompanying chords are in three-four time. Brahms' "Third[1] Symphony" is a characteristic subject for study. It is thoughtful, beautiful and highly organized, in the sense that there is nothing redundant. The student should study it with great care since it represents the next great step in symphonic writing after

[1] Brahms' four symphonies are published for piano solo, piano, four hands, and for two pianos (one performer at each).

Beethoven. The opening chords, with their step of a minor third from F to A flat are important as they serve as a sort of counterpoint to the main theme which enters in the third measure. This theme extends to measure 15, when a subsidiary theme enters. Theme II begins at measure 36. A new version of it appears at measure 44, and at measure 46 a motive from it occurs in two-four time, a characteristic device of Brahms. The initial motive of the minor third occurs again at measure 49 (when the time changes to six-four). The development section of this movement begins after the double bar and should be carefully examined. At measure 78 the second theme is used in an extended form. At measure 102 a beautiful passage made from the motive of the minor third occurs, and at *Poco Sostenuto* there is a quite magical use of Theme I. The second and third movements are simple and easily understood. The Finale is the most vivid and interesting of the four movements, and illustrates what power of expression may exist in a few notes, for the opening measure grows continually in significance and beauty. An episodic theme appears at measure 18. It is easily recognizable as being made from half notes. Theme II appears at measure 52. The development, beginning at measure 108, is full of that rapidly changing character which this section of the movement demands. It is like a play in which the characters find themselves continually in new situations. The rhythmic outline of the various themes is here so clear that the student will find little difficulty in following them. Particular attention should, however, be paid to the uses to which the episodic theme is put. In the Coda, in particular (F major), it takes on a fateful tone against the rapidly moving parts which surround it. All these trill-like figures are, of course, drawn from the first three notes of the movement.

Brahms' songs are a natural succession to those of Schubert and Schumann. He creates melodies of great beauty in which the general mood of the verses is caught instead of making the music at every point subservient to the text.

Fine examples may be found in "Sapphische Ode," and "Die Mainacht," where the melodies have the long span that is characteristic of Brahms, in "Feldeinsamkeit," which catches magically the mood of the words, in "Der Schmied" and "Minnelied." Brahms' three Sonatas for violin and piano are highly characteristic. Among available pieces for the reader's actual experience are the following: "Song from Ossian's Fingal" and "I Hear a Harp" for women's voices; quartets for mixed voices, Op. 92 and 112; "How lovely are Thy dwellings" from the Requiem (other portions of which — notably number 2 — could be used).

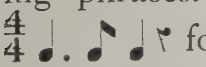
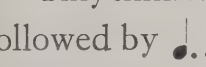
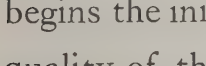
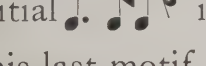
Richard Strauss (born 1864) has carried to a high point of perfection the Symphonic Poem, which is, in form, a sort of condensed symphony, and which usually has a title. We owe this form chiefly to Liszt. Strauss' music is exceedingly skillful in every way and has considerable vitality. "Tod und Verklärung"[1] of the Symphonic Poems is the most available for study. The poem connected with it was written after the music was composed, but has been accepted by Strauss as description of the music.

César Franck[2] is the next great name in music. He was a Belgian (born in Liége, 1822) though his life was spent in Paris. His early compositions displayed but little of the greatness of his genius, but during the latter part of his life he wrote one symphony, one piano quintet, one string quartet, one sonata for violin and piano, several fine pieces for piano solo or for piano with orchestra, and "The Beatitudes" for chorus and orchestra, all of which deserve to rank as great music. Of these the Quintet is, perhaps, the finest. Franck differs greatly from Brahms in being by nature something of a recluse and a mystic. He was shy, lovable, modest, and deeply religious. His music has little relation to folk-song and dance. Whereas in the symphonies of Beethoven

[1] Published for piano solo, piano, four hands, and for two pianos; the latter is the most effective arrangement.

[2] See *Life of César Franck* by d'Indy. The student should procure the symphony and study it; or the violin sonata.

and Brahms there are countless dance rhythms, and most of the slow themes owe something to the folk-song, in Franck's music there is more of the old religious spirit. He had a good sense of construction and a fine capacity for developing his themes. His music seems highly emotional when compared to that of Brahms, for he constantly modulates from key to key. Some of his finest effects are produced in this way.

Franck's Symphony[1] is in three movements, the middle one being a combination of slow movement and Scherzo. The form of the first movement is somewhat varied by the use of the slow themes at the beginning and their subsequent treatment in connection with the Allegro proper. The key to this is to be found in the use of Theme I with its continuing phrases. Rhythmically stated they are as follows:  followed by  ; when the Allegro proper begins the initial  is followed by  (the salient quality of this last motif lies, however, in its contour rather than in its rhythm). The second movement is a combination of slow movement and Scherzo; *i.e.*, the first theme is worked out in the customary manner, and then, instead of following it with another slow theme in a contrasting key, the composer plunges into a light, rapidly moving theme which occupies the whole center section of the movement. Near the close of this section this new theme appears as a counterpoint to the one first stated. The first theme of this movement is one of Franck's most characteristic melodies. The Finale, while containing new material, combines in itself the themes of the previous movements and is, therefore, much like a dramatic summing up of the whole. The derivations of the varied material there found should be carefully worked out by the student. Several short choral compositions of Franck are available with English texts. One of the best of these is "Far o'er the Bay" for mixed

[1] See Surette *The Development of Symphonic Music.*

voices. A volume of Songs and Duets is published in which will be found the well-known duo "La vierge à la crèche."

Debussy (born 1862) has had a considerable influence on contemporary music. He wrote in various instrumental forms, but is best known by his piano music and his opera. He does not depend so much on pure melody as on effects produced by the freest sort of harmonic treatment, and the use of the whole-tone scale.[1] Among his compositions for piano "Images" and "Preludes" should be examined. Debussy's music represents one step further in the exploration of new harmonies. He is not among the greatest of composers. He depends on delicacy of outline and iridescence of color. Within his range he is a fine master of his craft. His opera "Pelleas and Melisande" is epoch-making because of its beauty, and because in it he frankly dispenses with melody, thematic development, set pieces, etc., and gives to his singers a sort of half spoken chant, while the orchestra (a small one) is used to intensify each moment by music almost entirely devoid of regular form or continuity. The result is that one's attention is almost entirely focussed on the drama itself.

[2] Contemporary French music is full of vigor, and Ravel, d'Indy, Roger Ducasse, Paul Dukas, Guy Ropartz, and Florent Schmitt are among the leading composers. Their music is full of interesting experimentation with new harmonies and other forms of expression. And while it seems radical it will be found to be moving along legitimate lines.

Russia, during the last fifty years, has produced an important school of music whose influence is widespread. Tchaikovsky (born 1840) was the first of this school. He wrote six symphonies, many operas, and a considerable number of pieces in smaller forms. His piano pieces are not notable, but some of his songs, and especially his Fifth and Sixth

[1] In which every step upwards is a whole tone. The ordinary major scale has two halftone steps, between 3 and 4, and 7 and 8.

[2] Durand, Paris, publishes the music of these composers. Each has written for piano solo.

Symphonies are fine examples of national art. He is an impassioned composer, exercising little restraint, and convincing as much by his eloquence as by his ideas. The slow movement of his Fifth Symphony is a representative movement containing one of his finest melodies. The whole of the Sixth Symphony is eloquent and impassioned.

Following Tchaikovsky came Moussorgsky, Borodin, Glazounoff, Rimsky-Korsakof, Rachmaninoff, and many lesser lights. Of these Moussorgsky had, perhaps, the greatest genius, though lacking somewhat in craftsmanship. All this music has qualities that set it apart from French and German music. There is in much of it a touch of Orientalism. It is often primitive in its vigor. Much modern Russian choral music is available. The following are practical for small chorus: Rachmaninoff "Cherubim Song," Rimsky-Korsakoff "Comes Kolyada," Tchaikovsky "The Nightingale," "Ballad of the Volga" (traditional), Moussorgsky "At Father's Door."

The songs of these great Russian composers constitute the easiest means of studying them. The modern Russian[1] song is generally composed in free dramatic form as opposed to the lyric style of Brahms.

Among contemporary composers Stravinsky is important. His Ballet music shows great skill in characterization and invention. He uses dissonance with the utmost freedom, and expresses himself best through the form of the Ballet. Among his best-known works are "L'Oisian de Feu" and "Petrouchka." On account of the extreme fidelity of his music to the medium employed it is difficult to gain an idea of its significance from transcriptions. And the Ballet music requires the action to give it significance. The more subtle an art becomes the less it can suffer a change of medium.

American composers, during the last twenty-five years,

[1] Songs of many of these composers have been published with English texts. There is also available a certain amount of music for piano; see Moussorgsky *A Sketchbook for Piano;* Rimsky-Korsakof, *Romance in A Major;* Rachmaninoff *Melodie in E Major; Prelude in C sharp Minor;* Cesar Cui, *Berceuse;* Borodin, *Serenade.*

have been struggling against a lack of real understanding on the part of the public. Our opportunities for hearing great music remain small. Only in our largest cities is good orchestral music heard. There are few small local orchestras of real merit; choral societies lead a precarious existence and we have no small repertoire operatic companies. In New York and in a few other large cities there is a small and highly intelligent public, but the great body of our people hear little fine music. We suffer, also, from not having folk music of our own as other countries have. Nor do we make music at home. Ours is a largely transplanted art. There is, in the popular dance music of today, a subtlety of rhythm of which more use might and should be made. It is distinctly American and it offers interesting possibili ties. It is significant that this popular music is improving in quality. It no longer depends entirely on subtlety of rhythm, but now has great harmonic variety as well, and some attempt is being made to make its texture stronger. It still lacks a certain kind of real tunefulness, and it is significant that the melodies of the great composers are being bodily transferred into some of our popular dance music. It is obvious that all great art rests on some common consciousness. We need a good school of popular music before we can have one of a higher kind, and we seem to be gradually approaching the former, for signs of native wit are not lacking in some of the best popular tunes.

BIBLIOGRAPHY

Dickinson, E., *The Education of a Music Lover.* New York, 1915.
Dickinson, E., *Music and the Higher Education.* New York, 1915.
Dickinson, E., *The Study of the History of Music.* New York, 1905.
Dickinson, G. L., *The Magic Flute.* New York, 1921.
Fuller-Maitland, J. A., *The Life of Schumann.* London.
Goetschius, P., *Lessons in Music Form.* Boston, 1904.
Grove, G., *Beethoven and His Nine Symphonies.* London, 1896.
Grove, G., *Dictionary of Music and Musicians.* (Including American Supplement: 6 Vols.) New York, 1920.
Gurney, G., *The Power of Sound.* London, 1880.
Hadow, W. H., *Studies in Modern Music.* London, 1896.
Hanslick, E., *The Beautiful in Music.* London, 1891.
Henderson, W. J., *The Orchestra and Orchestral Music.* New York, 1899.
d'Indy, V., *The Life of César Franck.* London and New York.
Jahn, O., *Mozart.* (3 Vols.) London, 1891.
Lavignac, A., *The Music Dramas of Richard Wagner.* New York, 1898.
Mason, D. G., *Beethoven and His Forerunners.* New York, 1904.
Mason, D. G., *From Grieg to Brahms.* New York, 1902.
Mason, D. G., *The Romantic Composers.* New York.
May, Florence, *The Life of Brahms.* London, 1905.
Newman, E., *Wagner.* New York, 1904.
Niecks, F., *Chopin as Man and Musician.* (2 Vols.) London, 1890.
Parry, C. H. H., *Studies of Great Composers.* London, 1902.
Parry, C. H. H., *Style in Musical Art.* New York.
Pater, W., *Essay on Style.* New York, 1889.
Rolland, Romain, *Beethoven.* New York, 1917.
Schumann, R., *Music and Musicians.* London.
Sharp, C. *Folk Singing in Schools.* London.
Spalding, W. R., *Music: An Art and a Language.* New York, 1920.
Spitta, P., *John Sebastian Bach.* (3 Vols.) London, 1899.
Surette, T. W., *The Development of Symphonic Music.* Boston, 1915.
Surette, T. W., *Music and Life.* Boston, 1917.
Surette and Mason, *The Appreciation of Music.* New York.
Symons, A., *The Romantic Movement in English Poetry.* New York, 1909.
Thayer, A. W., *The Life of Beethoven.* (3 Vols.) (Translated by Krehbiel.) New York, 1921.
Wallace, W. *The Threshold of Music.* New York, 1908.
The Oxford History of Music. (6 Vols.) Oxford, 1901.

EPILOGUE

EPILOGUE

SIGNIFICANCE OF ART

Art is the crowning glory of the visible world. Hill and plain, sea and forest, bathed in sunshine, or ominous in storm, mould man's moods and form his fancies, and are to him inspirations of beauty which he deifies by his imagination.

Worshipping the creations of a universe of which he is a part and permeated by its influences, he, in his turn creates, and art is his achievement.

Nature is his storehouse, he submits her immutable laws to his will, wrests her secrets from her, and shapes them anew, gathers her treasures, arranges them, transmutes and translates, that they may express his emotions, image his beliefs, and glorify his ideals; and at his hands all things suffer a change which is rare.

The elements become his servants, and with fire he clears metal of its dross, makes clay imperishable, and creates glass with which he confines space in an invisible film. He facets jewels until they glow like stars, and with the hues of earths and stains of plants he pictures his life and desires in a myriad dyes.

Columned forests are renewed in his cathedrals and their infinite details in the involutions of his patterns.

He not only imitates nature but he epitomizes her and says in a word what it has taken her eons to relate.

Art is his creation, and his message down the ages; a lambent message that all may read, portraying the records of his life, his labor to express, his elemental conceptions and his dawning ideals, and finally his achievements, serene, indisputable, and inspiring. Art proclaims persistently his qualities, whether he be of the earth, earthy, or a living spirit, and without its record of the past, the chronicles of man grow pale and lack testimony. The great crowd of witnesses are

those of architecture, sculpture, painting, and the minor arts; tangible and conspicuous. Music and Literature have their times and places, these other are the constant companions and environment of man.

A great work of Art is a culmination; a harmony of the treasures of nature transformed by the alembic of man's inspiration into the ultimate expression of his ideals.

The record of Art is so varied that its interpretations are diverse; and being Protean, its phases seem contradictory; for it appeals to the qualities in man which have been created in it by man. Nobility, mysticism, delicacy, sensuous beauty, each finds its appreciation, long after its conception, in the minds of those who resemble its creators. Like calls to like.

But the inherent virtue in Art is the sincerity of its purpose, however insignificant may be the object. Falsity, Charlatanism, and Arrogance are as inimical to Art as they are to the character of man. Therefore he is merely impressed by the splendor of palaces, is stirred by the memorials of victories, bows before the poignant anguish of Calvaries, and is awed when within the fanes of religion, as in the presence of the Deity.

Even if these be but partially successful efforts which have not attained their full apogee, they still thrill the chords of being, which respond to the appeal.

But if the monument be shapeless, the sculpture meaningless, the picture sordid, and Art be absent, then they stultify, even if they do not offend, and failing in achievement, depress rather than inspire.

Therefore man's environment like his intimates, helps to form his character; and it becomes an obligation, a duty, that the environment should be of the best, and to obtain this result has been man's constant endeavor through the centuries.

Early in man's history appear his efforts to refine materials and shapes. Objects which to be useful to him require

superlative qualities receive his first attention. The bow, the spear, the sword, and the oar become masterpieces of skill, for upon them hang life and death. Work which has proved its worth is beloved and receives marks of distinction and of possession, and such designation becomes embellishment, and conquerors are clothed in purple; women deck themselves with jewels until they rival the constellations of the heavens, and the gods themselves are known as the "Shining Ones." Idols typify deities, pictures illustrate the acts of life, and painting and sculpture are born. The initial effort is always towards representation, but subjects become conventionalized, lose their specific application, and become symbols.

Symbolism expresses general attributes rather than resemblances. The symbols shrink, express sounds, and form written language, or else develop, signify purposes and possession, and become heraldic devices, emblazoned upon walls and banners, announcing prowess and lineage, and finally appear as allegory.

Long ere this, man had built his houses for himself, for his dead and for his gods, and each he had made distinctive.

The intimate objects associated with his daily life receive the loving care expressed in the little arts always so dear to him, and which accompany him to the grave in a pathetic attempt to forge a link in the continuity of his existence; but it is the temple that stirs his highest aspirations and with fear and reverence, with boding dread or abiding faith he devotes his best effort to the shrine, and no labor can be too arduous, no skill too great, no material too precious to glorify his god.

Man and man alone has created a new thing, Art, which gathers the works of God and transforms them into the outpouring of the heart of man, embodying his dreams, voicing his hopes and which he symbolizes as Justice, Honor, and Fame upon the seats of Law and Government, and lays as his most precious offering at the feet of his Deity.

Art crowns and glorifies the achievements of man, and should be worthy of its supremacy.

The advantages to be gained from a study of the Arts are unequalled, and preëminent amongst them is the association with the most complete and the finest expression of Man's life and history. The vistas of the past become the byways of the present, and the centuries live again in our midst. No longer is our sight limited by the immediate surroundings, no longer are our associates and friends only those of the day and place. The beauty of ages is spread before us, the companionship of the true princes of the earth is ours. Is it a little thing that the doors are open to us to the conclaves of the great, to the aspirations of masters who greet us, and even to the environment of the gods themselves?

For the student of Art sees visions; the dull sensations of consecutive moments become an embracing perception of the life of all peoples. If we were offered the wealth of the ages in accomplished achievement, not merely as potential opportunity, if the Glory that was Greece and the Splendor that was Rome should be proffered to us for the asking, it is inconceivable that we should decline such a gift. And it is this inestimable offering with which Art welcomes us. Our horizons broaden to the illimitable, the heavens rise above us to infinite depths. Everywhere the pleasures of sight are enhanced, and the understanding of events enlarged, and the example of the activities of man's hand and mind are inspiring us in the present. If the past has done so much and so well, shall we with such a heritage do less and fail?

Therefore to perform we must comprehend the work of our predecessors, for of what avail is it to attempt to carry on the torch kept alive by our ancestors, if we have no knowledge of what fed its flame?

Art leads us into pleasant places, makes radiant the commonplace, satisfies the desire for the beautiful; it guides us to the heights, teaches us to idealize and glorify, and erects for us a standard, an oriflamme before us, which we follow to

distinguished achievement. But Art is unworthy if it is insincere, and it requires Devotion and Knowledge or it fails in performance. With these no work is so small that it may not become a masterpiece, no theme so great that it may not be ennobled.

C. Howard Walker.

THE END

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